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Advancing Namibian Higher Education: Promoting the Debut of MOOCs in Namibia

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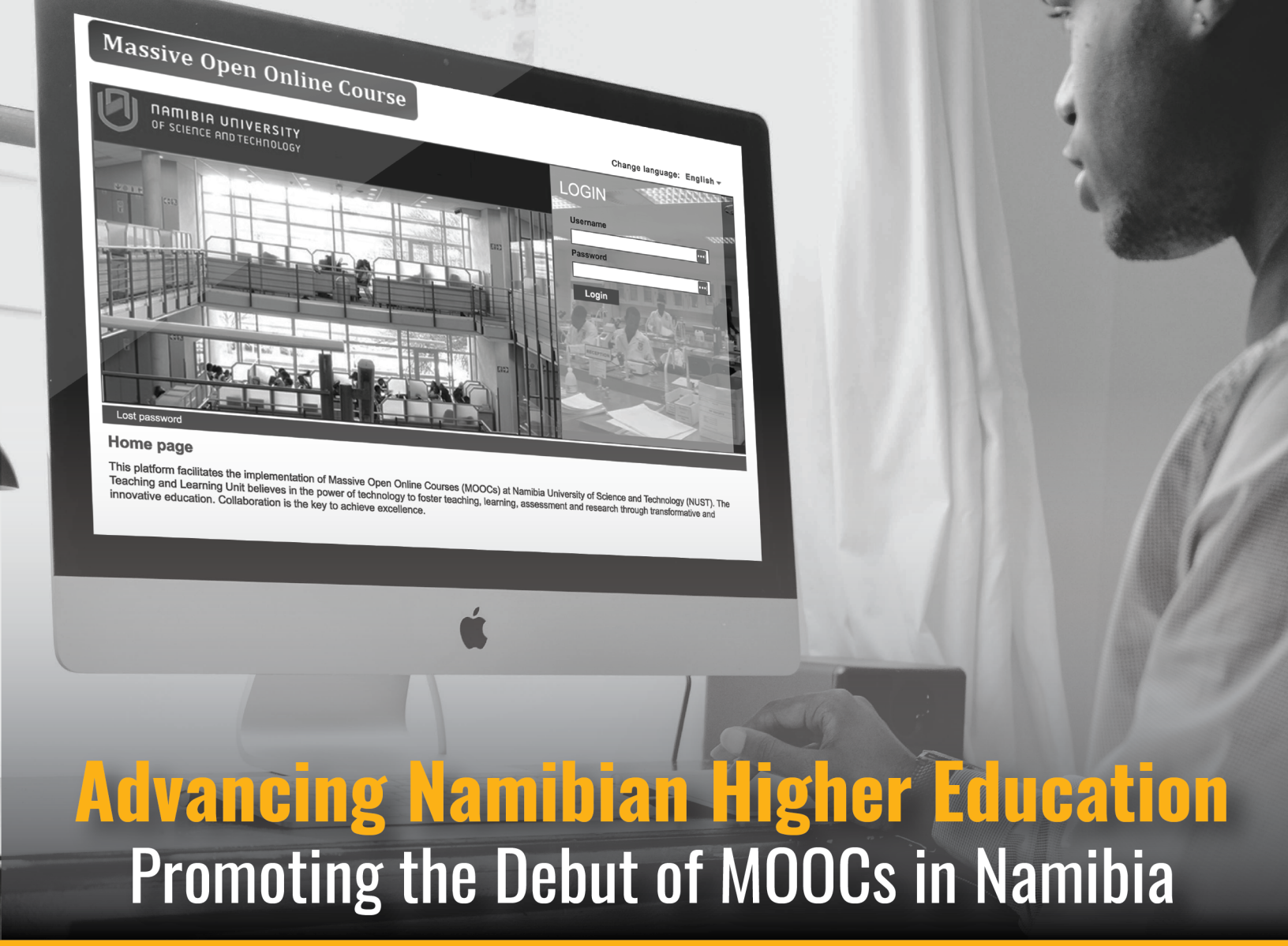

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NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

WPI

Advancing Namibian Higher Education: Promoting the Debut of MOOCs in Namibia

An Interactive Qualifying Project submitted to the Faculty of WORCESTER POLYTECHNIC INSTITUTE in partial fulfillment of the requirements for the degree of Bachelor of Science

by

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Report Submitted to:

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ABSTRACT

This project aided the Teaching and Learning Unit at the Namibia University of Science and Technology (NUST), in Windhoek, Namibia, in promoting the launch of two Massive Open Online Courses (MOOCs) at the university–the first such initiative in Namibia. The team collaborated with student volunteers and NUST staff to develop a promotional strategy consisting of videos, posters, emails, radio advertisements, and face-to-face promotion. This promotional strategy supported the MOOC launch, contributing to a 160% increase in enrolled students. The results indicated that email, digital posters and videos distributed through Facebook were the most effective methods. These methods formed the basis of a refined promotional strategy for future MOOC promotion at NUST.

EXECUTIVE SUMMARY

Introduction and Background

Prior to 1980, Namibia had no formal opportunities for higher education, and students wishing to pursue higher education had to travel to neighboring countries (Routledge, 1999). After gaining independence from South Africa in 1990, the Namibian government began establishing a higher education system of its own, which today consists of three universities, including the Namibia University of Science and Technology (NUST) (Katjavivi, n.d.). As Namibia's higher education system grows, its universities seek innovative strategies to meet students' needs given the available resources. At NUST, the Teaching and Learning Unit (TLU) is the center responsible for enhancing "the teaching and learning competencies of faculty and students" (About TLU, n.d.). According to TLU staff, there is a perceived gap in skills that enable students' success at the university and in the workforce after graduation.

To reduce this skills gap that exists in Namibian university education, the TLU is turning to Massive Open Online Courses (MOOCs). These courses, which first appeared in 2008, are open to an unlimited number of students regardless of university enrollment or geographical location (Lewin, 2013). MOOCs typically consist of pre-recorded lecture videos, as well as online exercises, discussions and assessments. Some educators see MOOCs as an innovative method of supplementing classroom-based education, allowing institutions to more efficiently utilize their teaching staff and other educational resources (Escher et al., 2014).

The TLU developed and launched a new platform to host short MOOCs at NUST. This represents the first effort to adopt MOOCs in Namibia. The TLU created two initial MOOCs, *Technology to Foster Effective Learning* and *Time Management* to address the skills gap. Since these MOOCs are open to students around the world, this platform allows NUST to share knowledge with a wide international audience, potentially strengthening Namibia's voice on the global stage. In order to support the success of this MOOC initiative, it was critical that a well-designed promotional strategy accompany the MOOC launches. Mr. Maurice Nkusi, Acting Director at the NUST TLU, tasked the project team from Worcester Polytechnic Institute (WPI) to develop a promotional strategy to motivate students to register for the MOOCs.

Methodology and Results

The goal of this project was to assist the Teaching and Learning Unit (TLU) of the Namibia University of Science and Technology in promoting the launch of two MOOCs at the university by using a pilot study to implement an effective promotional strategy and to utilize performance tracking to assess promotion success. To accomplish this goal, the team identified five objectives: 1. Establish connections with NUST staff and student volunteers, 2. Develop promotional materials, 3. Engage with a pilot group to obtain and analyze feedback, 4. Refine and release promotional materials, and 5. Assess promotion success through performance tracking.

In order to construct a successful promotional strategy it was critical to understand the cultural and promotional atmosphere at NUST. **Therefore, the first objective was to establish connections with NUST staff and student volunteers.** With the assistance of the TLU, the team recruited nine student volunteers to create a pilot group that provided feedback on promotional materials developed in later phases. This objective also involved conducting a series of unstructured interviews with the student volunteers and representatives from key NUST

organizations, including the Student Representative Council, the online radio station (NUST FM), and the Brand Ambassador of the Month Committee. These interviews provided insights into potential promotional methods for the project as well as promotional protocols at NUST.

Based on the information gained from background research and integrating the project team into the NUST community, **the next objective was to develop a promotional strategy consisting of six promotional methods.** The team recorded four radio advertisements with the help of NUST FM (Figure 0-1) and designed three posters for print and digital distribution. Next, the project focused on developing two promotional videos (Figure 0-2). The first video introduced students to the concept of MOOCs (https://youtu.be/QOMZeRDbP2g), while the second video advertised the *Technology to Foster Effective Learning* MOOC (https://youtu.be/NO_Ayonp1tc). The promotional strategy also included an "activation", a type of outdoor event at NUST which allowed team members to speak directly with students. Team members also visited six lectures on campus to give brief presentations about the MOOCs. Finally, the project utilized an email announcement to reach out to 10,560 NUST students to inform them about the MOOCs. All these promotional materials formed a cohesive promotional strategy consisting of both digital and face-to-face promotional methods, working together to convert students into users on the MOOC platform.

Figure 0- 1: Mr. Nkimbeng Recording a Radio Advertisement

Figure 0-2: Mr. Feehrer Recording Promotional Video

The third objective was to engage with a student pilot group to obtain feedback on the promotional materials before release. The pilot group evaluated each promotional material using the following five attributes: informativeness, entertainment, irritation, benefits, and credibility. These five attributes originated from a study on Black South African Millennial Students' Attitudes towards Web Advertising (Bevan-Dye, 2013). The team analyzed the pilot group's evaluations and incorporated their feedback before releasing the materials. These pilot group evaluations helped ensure that the promotional materials were culturally adapted and appropriate for the NUST campus atmosphere.

The fourth objective was to refine and release the promotional materials once they received positive feedback from the pilot group and approval from the NUST organization representatives. With help from the NUST marketing department, the team posted the videos and digitals posters to five NUST Facebook pages and groups over the course of April. Figure 0-3 illustrates the release dates of the promotional materials as well as the launch dates of the two MOOCs.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
2	3	4	5 Poster 1 (Digital) ★ MOOC 1	6 Poster 1 (Digital)	7 Poster 2 (Print) Poster 1 (Digital)	8
9	10	11 Poster 2 (Digital)	12	13 Poster 2 (Digital) Radio Ads Start	14	15
16	17	18 ★ MOOC 2	19 Activation Poster 1 (Digital)	20 Video 1	21 Poster 2 (Digital) Video 1	22
23	24 Lecture Pitches Video 2	25 Email Poster 3 (Digital)	26 Video 2 Lecture Pitches	27	28	29

Figure 0-3: Promotional Materials Release Date Calendar – April, 2017

The fifth objective was to measure the performance of each promotional method by collecting data which corresponded to the five phases of the marketing funnel: Awareness, Consideration, Conversion, Loyalty, and Advocacy (Willits, 2016). This investigation focused primarily on the first three phases to illustrate the journey that students took to become users on the MOOC platform. This assessment resulted in a refined promotional strategy recommendation.

Awareness Phase: To determine the effectiveness of each promotional method in spreading awareness, the team recorded the number of individuals each promotional method reached. Videos, digital posters and radio advertisements were highly effective methods in this phase, reaching approximately 7,000, 4,700, and 2,000 individuals, respectively. The lecture pitches and activation reached an estimated 270 students in total, and as a result were not as effective in spreading awareness as the digital methods.

Consideration Phase: In the Consideration phase, the project tracked the number of individuals that visited the MOOC registration page. The team used *Bitly.com*, a URL shortener and analytics website, to create trackable short links leading to the registration page. Each promotional material contained a unique short link that tracked the number of visits to the registration page that originated from that material. Figure 0-4 illustrates the number of visits that resulted from the use of each promotional method.

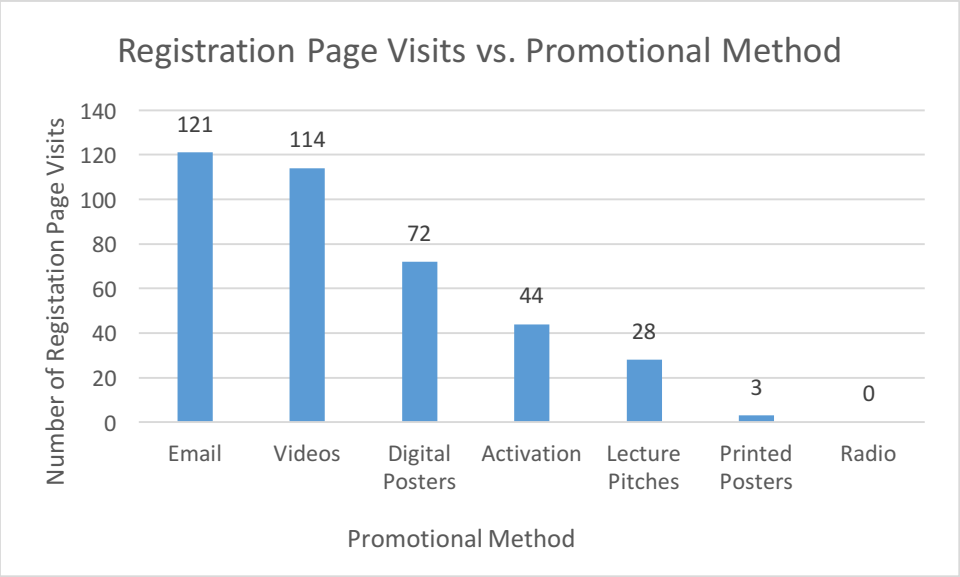

Figure 0-4: Number of short link Visits vs. Promotional Methods

The email, videos and digital posters were very effective methods in attracting traffic to the MOOC registration page. The face-to-face promotional methods of lecture pitches and the activation were somewhat effective for the Consideration phase. The printed posters and radio advertisements did not perform well. However, it is possible that their performance in the Awareness phase made students more likely to visit the registration page later through other methods.

Conversion Phase: This investigation also tracked the number of students that registered for the MOOC platform, starting on April 5, 2017 when the promotion began. Figure 0-5 illustrates the cumulative number of registrations on the platform over time, plotted beside the release of the promotional materials. Because the TLU posted an advertisement on a NUST website before the team began their promotion, it was difficult to demonstrate correlation between the release of each promotional material and the growth of users of the platform. However, periods of increased growth that followed significant promotional material releases did suggest a correlation. For example, the team held the activation on April 19, 2017, resulting in 29 onsite registrations, causing a noticeable increase in slope on that date in Figure 0-5. Then, towards the end of the project, the promotional releases accelerated significantly, which the team believes led to the sharp increase in the rate of registrations between April 25 and 27. Lecture pitches partially contributed to this increased rate as there were many onsite registrations. Although the relationship is not always as visible, these two windows suggest an overall correlation between the release of promotional materials and the increase in users on the platform.

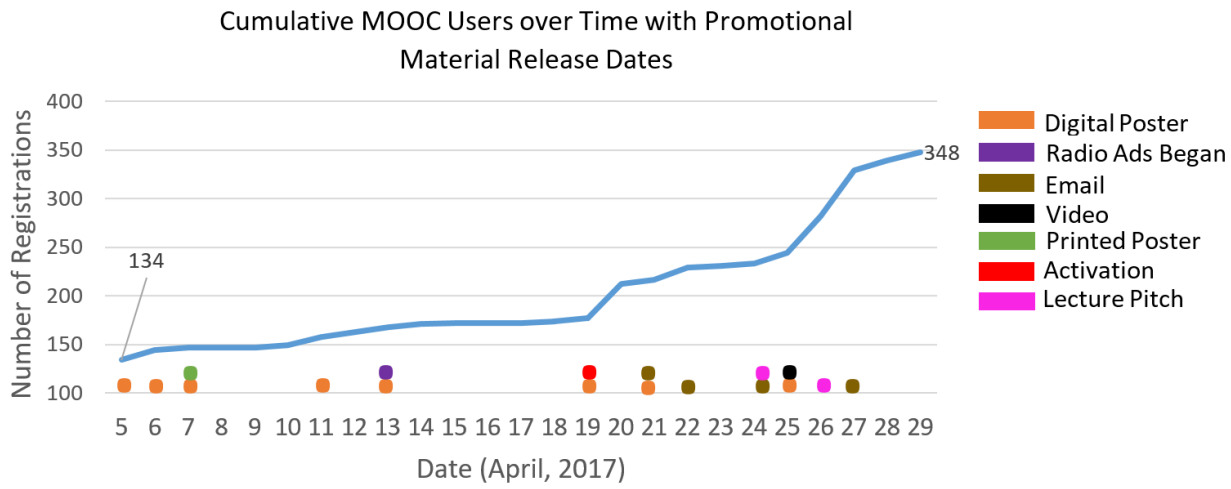

Figure 0-5: Number of Cumulative Responses to MOOC Registration Form

Conclusion

As a result of the promotional materials the team and the TLU released, the MOOC platform totaled 348 registrations by the end of the project, a 160% increase from the start of the promotion. The team concluded with relative certainty that this project contributed to the success of the MOOC launch at NUST. The findings from performance tracking led to a refined promotional strategy recommendation. **Email, as well as video and digital posters released through Facebook** appear to be the most efficient promotional methods based on the data collected and thus the team recommended that the TLU primarily utilize these three methods to promote future MOOCs. The **activation and lecture pitches** were effective in directly converting MOOC users. However, the project recommends them as secondary promotional methods in the refined strategy, due to their lesser performance in the Awareness and Consideration phases, and amount of time required to implement them. Future promotion teams should only use these methods if they have extra time after implementing the primary methods. Lastly, based on their performance in the Consideration phase, **radio advertisements and printed posters** appeared to be less suitable for directly attracting MOOC registrations. However, more research could identify techniques for improving the performance of these methods.

In summary, this project both implemented a promotional strategy and assessed its performance to recommend a refined version for the future. As NUST's MOOC initiative was the first such effort in Namibia, there is much left to learn about how to best promote MOOCs at NUST. However, the findings and recommendations that originated from this project formed the basis for a promotional strategy which future TLU interns will improve as the MOOC platform grows. The combination of implementing a promotional strategy to support the MOOC launch and assessing performance provides NUST with an extremely valuable roadmap for future promotional success. The team believes this information will help MOOCs to become a successful long-term initiative for the university.

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DISCLAIMER

This Interactive Qualifying Project was written as a requirement for the completion of a Bachelor's of Science degree from Worcester Polytechnic Institute. The team members are not marketing experts or professionals. This document was written for the Teaching and Learning Unit and Namibia University of Science and Technology community. The opinions described in this report are only from a small fraction of students and are not necessarily representative of the entire NUST student body. This document does not represent the opinion of the Teaching and Learning Unit of the Namibia University of Science and Technology or Worcester Polytechnic Institute.

TABLE OF CONTENTS

TABLE OF FIGURES

TABLE OF TABLES

LIST OF ACRONYMS

AVU - African Virtual University

COST - College for Out-of-School Training

ICT - Information and Communication Technologies

ICWE - International Conferences, Workshops, and Exhibitions

IT - Information Technology

IUM - International University of Management

MOOC - Massive Open Online Course

NESAP - New Economy Skills for Africa Program

NUST - Namibia University of Science and Technology

ODeL - Open Distance and eLearning

QR - Quick Response

SBA - Student Brand Ambassadors

SMG - Service Management Group

SRC - Student Representative Council

TASCHA - Technology and Social Change

TLU - Teaching and Learning Unit

UNAM - University of Namibia

UNESCO - United Nations Educational, Scientific and Cultural Organization

WPI - Worcester Polytechnic Institute

CHAPTER 1: INTRODUCTION

As a newly independent country, Namibia is striving to increase the quality of life of its people in several aspects including higher education. Before 1980, Namibia had no formal opportunities for higher education, and students that wished to pursue higher education had to travel to neighboring countries (Routledge, 1999). Namibia began creating its own university system after gaining independence from South Africa in 1990. As Namibia's higher education system grows, universities are developing methods to meet students' needs with their available resources. In 2004, the Namibian government created *Vision 2030*, a goal to "improve the quality of life of the people of Namibia to the level of their counterparts in the developed world, by 2030" (Nujoma, 2004). As a part of this initiative, universities in Namibia are seeking innovative strategies to bolster their education quality and accessibility (Nujoma, 2004).

The Namibia University of Science and Technology (NUST), the second oldest institution of higher education in the country, is turning to online learning as a technique for reducing the gaps that exist in Namibian university education. The Teaching and Learning Unit (TLU) is the center at NUST responsible for enhancing "the teaching and learning competencies of faculty and students through the use of innovative methodologies and technologies" (About TLU., n.d.). The TLU developed an online learning platform to host short Massive Open Online Courses (MOOCs) to extend students' knowledge outside of the classroom and better train them in skills that enable their success at the university and after graduation. The TLU recognized a lack of support for students on the MyNUST eLearning system and created a MOOC titled, *Technology to Foster Effective Learning,* to address this issue. Additionally, the TLU created a *Time Management* MOOC to address a perceived lack of time management skills among students.

As NUST's MOOC project is the first such initiative in Namibia, previous MOOC introduction efforts in other African countries can offer insights into the adoption of MOOCs in African cultural context. An example of one such effort is the African Virtual University (AVU), the most extensive eLearning network in Africa. The AVU has partnered with 53 institutions across 19 African countries with the goal of enabling institutions to use eLearning as a method of generating revenue (AVU at a glance, n.d.). Additionally, programs in Tanzania and Rwanda use

existing MOOCs to supplement students' higher education and better prepare them for the job market (Escher et al., 2014). Other educators believe that MOOCs, when employed in a "flipped classroom" model, can conserve educational resources in developing countries (Escher et al., 2014). These examples demonstrate that African countries are recognizing the potential impact of MOOCs in improving education, and can serve as reference when promoting benefits of MOOCs at NUST.

Although MOOC adoption can expand educational opportunities in developing countries, it also faces several barriers. Because the vast majority of MOOCs originate from the Western world, contextualizing them for African higher education can be difficult (Czerniewicz et al., 2014). In addition, some developing world universities face difficulties providing computer access and IT infrastructure capable of delivering video-rich MOOC content (Escher et al., 2014). Furthermore, researchers have found that lack of awareness and time are two of the largest barriers to MOOC adoption when it comes to integrating MOOCs in developing countries (Garrido et al., 2016).

To address the two largest barriers to MOOC adoption, the MOOC launch required a well-designed promotional strategy that both raised awareness of MOOCs and convinced students to invest their time in the courses. To convert students from non-users into enrolled users on the MOOC platform, the promotional strategy must be both persuasive and culturally appropriate. Although some educators have experimented with the adoption of MOOCs in Africa, the topic of promoting them remains largely unexplored. Information is available about marketing MOOCs from major platforms such as Coursera and edX, however the topic of promoting MOOCs at Namibian institutions and the way NUST students will perceive and interact with the MOOCs remains unknown. This gap in research makes promoting MOOCs at NUST a unique and exciting challenge.

The goal of this project was to implement an effective promotional strategy for two MOOCs at NUST. The promotional strategy consisted of videos, posters, radio advertisements, emails, an outdoor demonstration and short presentations in lectures. With help from the TLU, the team recruited NUST student volunteers to assemble a pilot group that anonymously evaluated promotional materials using scorecards. Based on the pilot group feedback, the team refined the promotional materials and released them to the NUST community. The project then

measured the digital traffic originating from all promotional materials to determine their individual effectiveness. The investigation indicated that email, as well as digital posters and videos distributed through Facebook, were the most effective and efficient techniques for promoting MOOCs at NUST. By the end of the project, almost 350 students had registered for MOOCs–a 160% increase from the beginning of the promotion. The implemented promotional strategy both supported the success of the MOOC launch and provided a refined recommendation for future MOOC promotion efforts at NUST.

CHAPTER 2: BACKGROUND

Online learning, which originated from distance learning, is changing the landscape of education as it gains more popularity around the globe. In particular, Massive Open Online Courses (MOOCs) provide students with easy access to higher education and can enable ubiquitous learning. Developing countries in Africa are investigating MOOCs as a means of advancing their higher education systems and are starting to promote the use of MOOCs. This chapter discusses the advantages and disadvantages of MOOCs, and the factors affecting the application of MOOCs in developing countries. Additionally, the chapter describes the educational resources in Namibia, and different components of promotion that could apply to advertising MOOCs.

2.1 Online Learning

Online learning, or "eLearning", is a type of educational instruction in which participants can access academic material using the Internet. Universities across the globe utilize online learning to provide their students with an opportunity to take courses off campus or to supplement classroom-based learning. MOOCs made their first appearance in 2008 and have emerged as a popular mode of learning (Lewin, 2013). Most MOOCs are open to an unlimited number of students via the Internet. The next sections include a history of online learning, benefits of MOOCs, and challenges MOOCs face today.

2.1.1 History of Distance Learning

For several centuries, educators around the world have tried solving the challenge of educating students who cannot physically attend class. Sir Isaac Pitman, the developer of a method for writing shorthand, carried out one of the earliest experiments in "distance learning." Pitman used mail correspondence courses to educate people on his shorthand writing method from far distances. Throughout the 20th century, further advances in distance learning expanded on mail-based correspondence courses by utilizing radio and television broadcasts to incorporate rich media into the curriculum (Matthews, 1999). The growth of the Internet has led to the modern incarnation of distance learning via online learning, allowing for more interactive and expansive courses. Educators around the globe integrate online learning into traditional

institutions, as they realize the benefits of applying online learning to supplement traditional classroom-based education.

2.1.2 MOOC Classification and Providers

In 2008, University of Manitoba professors Stephen Downes and George Siemens pioneered a new model for online learning. Their course, titled "Connectivism and Connective Knowledge," expanded the reach of an existing course at the university by allowing approximately 2,200 students to participate via the Internet. Participants in the course used blogs to share information and learn from one another. This course represented the first Massive Open Online Course, or MOOC. Inspired by the success of this first course, two Stanford professors offered their "Introduction to Artificial Intelligence" course online to around 160,000 students, realizing the concept of truly massive-scale MOOCs for the first time (Marques, 2013).

Downes classified MOOCs as either xMOOCs or cMOOCs. cMOOCs represent Downes' original vision for an interconnected network of students that learn from each other using web platforms such as blogs, discussion boards, and wikis. cMOOCs leverage the idea of "Connectivism," as seen in Downes' original MOOC. Alternatively, xMOOCs arose from universities as a more traditional, lecture-based approach to online learning, in which students watch recorded videos and complete online assessments (Marques, 2013).

Today, the majority of MOOCs offered are xMOOCs. Both private companies and nonprofit organizations, as well as educational institutions deliver xMOOCs on digital platforms. Some platforms, such as edX, represent partnerships between top institutions under a non-profit organization. Through most major MOOC platforms, users can purchase certificates of completion, but the options for obtaining institutional credit vary (Daniel, 2012). Table 2-1 summarizes some of the major MOOC platforms and Figure 2-1 demonstrates the online course distribution among different MOOC platforms, with edX and Coursera providing the most courses.

Table 2- 1: Main xMOOC Platforms (Chen, 2014)

Initiatives	Introduction	For profit	Certification fee	Institution credits
Coursera	An educational company founded by two Stanford professors in April 2012.	Yes	Yes	Partially
Udacity	A start-up founded by Stanford professors offering free courses in partnership with colleges and professors.	Yes	Yes	Partially
edX	A joint partnership between Massachusetts Institute of Technology (MIT) and Harvard in December 2011.	No	Yes	No
Udemy	A learning platform founded by investors.	Yes	Yes	Partially

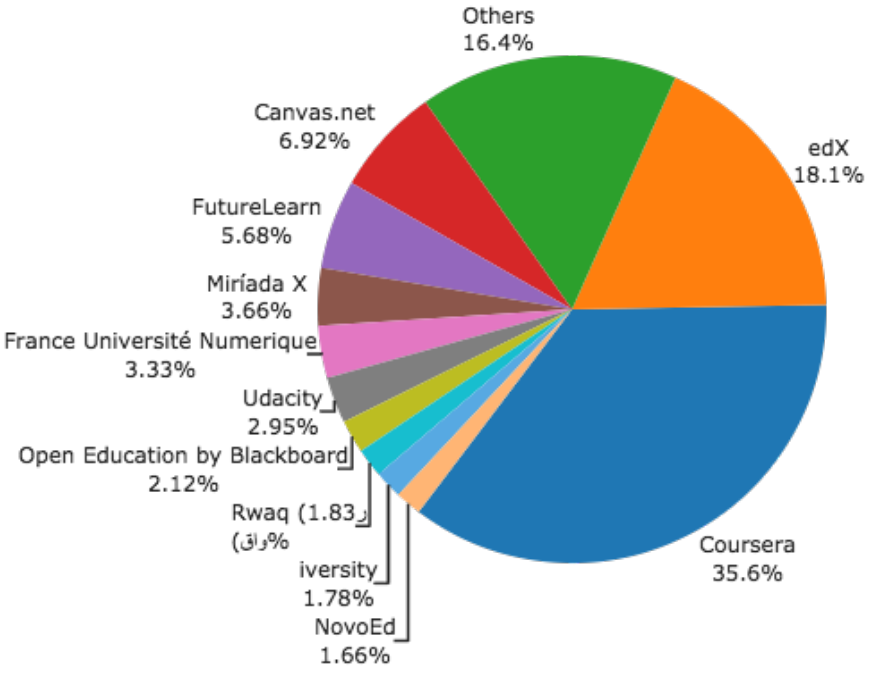

Figure 2-1: Course Distribution by MOOC Providers (Shah, 2015)

2.1.3 Benefits of MOOCs

The use of MOOCs can potentially benefit both the learners and the providers of online courses. For learners, MOOCs make higher education accessible and affordable to Internet users.

MOOCs eliminate the need for students to travel to classrooms, enabling students to learn remotely and saving transportation cost. Many MOOC platforms waive the expensive tuition for students to take courses from elite universities around the globe, such as Massachusetts Institute of Technology, Harvard University, and Stanford University. Study times become more flexible as students can learn at a comfortable pace (North, 2014). MOOCs also enable lifelong learning as they attract users ranging from teenagers to retirees (Pappano, 2012).

MOOCs also help with the marketing of institutions, experimenting with courses, and increasing the visibility of instructors. A number of MOOC platforms offer courses in collaboration with universities or independently. Some platforms offer institutional credits for their courses (Table 2-1). Institutions can use MOOCs as tools of marketing and branding to increase public visibility and potentially attract talent (Yuan & Powell, 2013). The policy-makers at the institutions can experiment with this inexpensive, low-risk platform to address budget constraint problems and lower the cost of degree courses (Carey & Berdik, 2013).

MOOC instructors can benefit from skill improvement and career development by scrutinizing their own teaching and building their reputation through MOOCs. Since users can play the recorded videos repeatedly, instructors generally pay more attention to their teaching styles in order to record the best lecture possible. This extra consideration helps the faculty sharpen their teaching skills (Chen, 2014). According to a survey of 103 professors who taught online classes, 39% hoped to use MOOCs to increase their visibility among their colleagues, and 34% hoped to use MOOCs to increase their visibility with the media and the general public. A rise in reputation can increase professors' earning potential and help them obtain tenure (Kolowich, 2013).

2.1.4 Challenges of MOOCs

MOOCs face several key challenges including content quality, social integration, and course completion. The course quality of MOOCs remains questionable (Chen, 2014; Straumshiem, 2014). A university's ability to conduct high-quality research does not necessarily correlate with its ability to produce high-quality online courses (Daniel, 2012). According to a study on interactions among teachers and students in online courses, social presence, student interaction, and teacher presence are crucial to the success of online learning (Wallace, 2003).

However, the distance in online learning can result in a lack of academic and social integration in comparison with learning in traditional classrooms (Bejerano, 2008). A survey among 100 college students at Johnson & Wales University suggests that 80% of the sample students who took online courses consider traditional courses more effective than their online counterparts (Shi et al., 2011).

Completion rates, cheating, and technical requirements represent further challenges for MOOCs. One study shows that, due to the ease of enrolling and lack of incentives for completion, less than 10% of students enrolled in typical professional English language online courses will complete them (El-Hmoudova, 2014). Without face-to-face interaction, maintaining the integrity of online assessments remains a barrier as well. A 2009 study found that among a sample of 121 undergraduate university students, 73.6% held the perception that it is easier to cheat in an online course than in a traditional course (King et al., 2009). Moreover, MOOCs require computer hardware and robust Internet access, posing a challenge for regions and institutions with technical and financial limitations (Escher et al., 2014).

2.1.5 Incorporating Soft Skills in MOOCs

Technical skills alone are insufficient for success in today's dynamic, distributed, and complex workplace (Joseph et al. 2010). The emphasis on soft skills in the modern workforce has driven MOOC providers to create more soft skill courses. Soft skills are the abilities of individuals to determine the best fit between oneself and the demands of the environment (Meunier, 2003). These skills are observable when individuals apply their self-management, communication, and interpersonal skills to work-related contexts (Joseph et al., 2010). According to a study at North-West University in South Africa, ten out of eleven lecturers and seven of the twelve respondents from industry indicated that students do not develop desired soft skills adequately at the university (Taylor, 2016). Soft skill training is challenging because it requires people to change techniques and habits they have developed over a lifetime (Olsen, 2013). Moreover, some uncertainty remains about who should be responsible for helping students develop these skills (Taylor, 2016).

The use of MOOCs provides a potential solution to the development of soft skills. Coursera provides a variety of courses related to soft skills, including *Critical Thinking for*

University Success by the University of Sydney as well as *Conflict Resolution Skills* and *Time Management for Personal & Professional Productivity* by the University of California, Irvine (Olston & Alexander, n.d.; DeBow, n.d.; Meloni, n.d). EdX also provides a series of courses, *Stuff You Don't Learn in Engineering School* by IEEE, tailored to advancing the technical careers of engineering students by teaching soft skills (Selinger, 2012). These MOOC developers designed these courses using the concept of *microlearning,* or dividing courses in short manageable segments. As a result, these courses only require a few hours of engagement per week. Notably, *Time Management for Personal & Professional Productivity* consists of an estimated four to eight hours of videos, readings, and quizzes in total (Meloni, 2015). The minimal time commitment of these courses alleviates the workload of both instructors and students. Microlearning helps students more effectively absorb information and can increase the flexibility of courses (Golwalkar, n.d).

In addition to major MOOC platforms, individual institutions are incorporating soft skills into their curriculum with MOOCs as well. For example, an Italian university, Politecnico di Milano, has developed soft skill courses in order to equip students for the workforce (Corti et al., 2014). Although many soft skills courses are accessible through the Internet, Politecnico di Milano decided to create its own using the Italian language because many skills strongly connect with local cultural issues (Corti et al., 2014). The university also involved students in the design process because students are the target user group of the course (Corti et al., 2014). Furthermore, the time-flexible nature of MOOCs themselves could potentially improve valuable soft skills, such as task prioritization and self-management (Freitas et al., 2015).

2.2 Applying MOOCs in Developing Countries

In the developing world, there are several common motivations and roadblocks that affect MOOC adoption. MOOCs can potentially help conserve resources and better prepare students for the needs of the workforce. Roadblocks to adoption include lack of time and lack awareness of MOOCs, as well as technical limitations. There are also key cultural considerations present when integrating western MOOCs into developing countries. In particular, contextualization of MOOCs for different cultures remains a challenge and can have far-reaching implications. A

number of ongoing MOOC projects in Africa provide key insights into the various strategies institutions are employing to navigate the complex task of adopting MOOCs to improve higher education.

2.2.1 Motivations for MOOC Adoption in Developing Countries

One of the major motivations for using MOOCs in developing countries is personal advancement. In a study by the Technology & Social Change Group (TASCHA) at the University of Washington Information School, researchers investigated the use of MOOCs among individuals in Colombia, the Philippines, and South Africa (Garrido et al., 2016). Researchers found that among the three countries, the most common motivations for using MOOCs were to gain specific skills for a current job, prepare for further education, or obtain professional certification. Overall, the motives for using MOOCs in developing countries are education and career advancement. Approximately half of the users in the study completed MOOCs to certification (Garrido et al., 2016), which is a clear contrast to developed nations where completion rates are often below 10% (El-Hmoudova, 2014). This may indicate more serious and committed usage of MOOCs in developing countries.

MOOCs are an appealing option for extending the resources of institutions in the developing world. By integrating existing MOOCs from top universities, developing world institutions have the potential to increase the quality of their education. This is especially useful in disciplines such as engineering, where innovative knowledge from MOOCs can supplement a lack of instructors or access to high-quality equipment. Some researchers also see great value in employing the "flipped classroom" model in developing countries, in order to conserve valuable resources such as time and teaching staff. In this hybrid between online learning and traditional learning, students utilize online lectures to learn the material and then spend class time focusing on applying that knowledge in a participatory manner. This model could potentially enable developing world institutions to more efficiently utilize their often-limited teaching staff by allowing instructors to focus on leading hands-on class periods instead of creating lectures (Escher et al., 2014).

2.2.2 Barriers to MOOC Adoption in Developing Countries

While MOOCs present an interesting opportunity, there are several key obstacles to MOOC adoption in developing nations. According to the TASCHA study, the most common reason for not using MOOCs in developing countries was a lack of awareness. The study shows that 79% of MOOC non-users reported that they were unaware of MOOCs (Garrido et al., 2016), indicating the need for more effective promotion of MOOCs in developing countries. Figure 2-2 provides a view of the different promotion channels through which non-users first become aware of MOOCs. For users in the three countries surveyed (Colombia, South Africa, and the Philippines), "online search" was the most common channel through which users first learned about MOOCs, followed closely by "teachers and professors", and "friends and family."

The study also found that among non-users who were aware of MOOCs, 50% cited lack of time as a reason for not using MOOCs. Researchers concluded that this was the largest barrier to MOOC adoption in this particular group. Only 4% and 2% of MOOC non-users cited lack of computer access and computer skills respectively, making them the least significant barriers to adoption. Likewise, researchers found income level was a relatively insignificant barrier to MOOC adoption, in contrast with what the study considered "commonly held assumptions." In the study, 80% of the MOOC users belonged to the low and middle-income levels (Garrido et al., 2016).

Other barriers to MOOC adoption in developing countries include technical challenges. Basic access to computers is only a small part of the issue. The Information Technology (IT) hardware capable of delivering video-rich MOOC content tends to be expensive. Additionally, many universities in the developing world are often unable to provide an Internet connection with sufficient bandwidth to reliably stream video content (Escher et al., 2014).

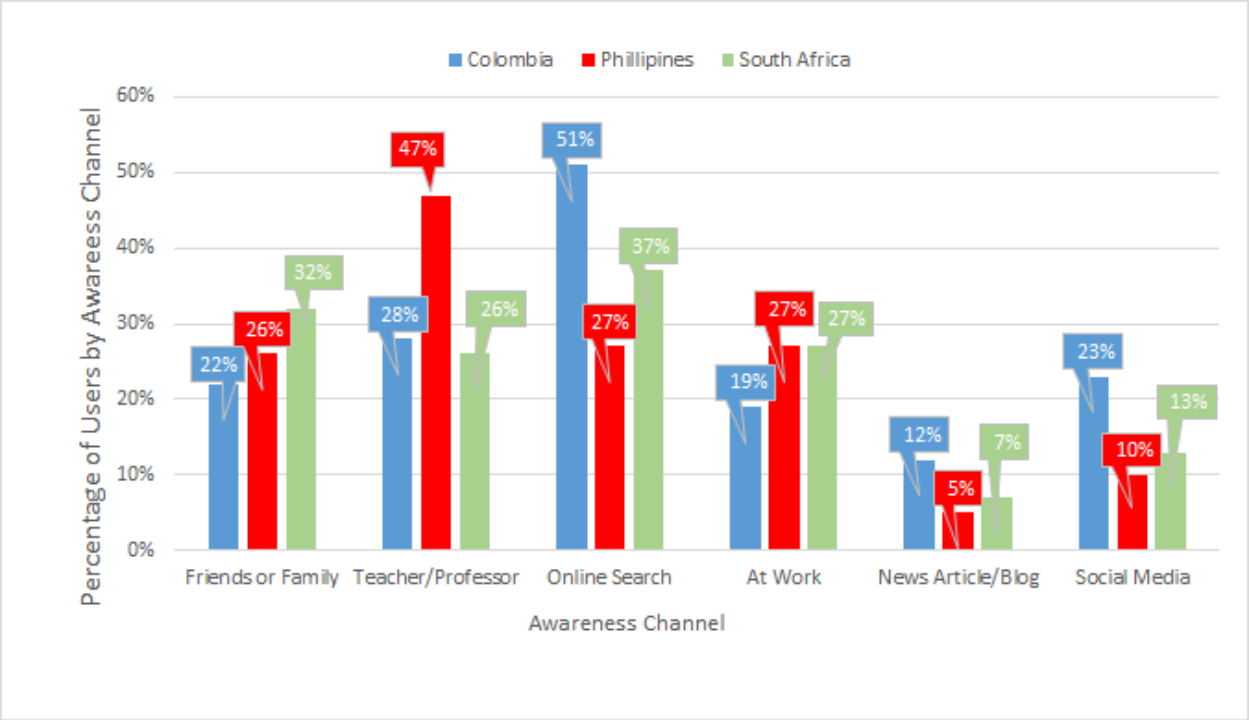

Figure 2-2: Awareness Channels Through Which Users First Learned About MOOCs. (Garrido et al., 2016)

2.2.3 Cultural Implications of MOOC Adoption in Developing Countries

While the convenience of integrating MOOCs from popular platforms into university curriculum may be desirable for many developing world universities, a number of issues arise when trying to transfer MOOCs across cultural divides. By drawing on pre-existing MOOCs, resource-limited universities can reduce the time and expense needed to create MOOCs from scratch; however, this approach has potential drawbacks. Since the vast majority of MOOCs originate from the United States and other Western countries, the developers strongly base the content on Western culture and ideals. Many researchers question whether the practice of utilizing these courses in the developing world further entrenches Western worldviews (Czerniewicz et al., 2014). Some, like Boston College Professor Philip Altbach, further argue that this practice constitutes a form of neo-colonialism. Altbach contends that this side effect of cultural infiltration by MOOCs is inadvertent, something that neither MOOC creators nor consumers intend. However, Altbach maintains that by primarily publicizing the voices of

prevailing global knowledge centers, such as New York, London, and Boston, the MOOCs movement could potentially disrupt the rise of local knowledge centers around the world. This could have a homogenizing effect on the world's knowledgebase. Even when translated into other languages, MOOCs retain the same underlying philosophies, methodologies, and research of the culture from which they originated (Altbach, 2013). MOOC copyright restrictions further complicate the issue. Since most MOOC creators do not design MOOCs with adaptability in mind, MOOC licenses often do not allow modification. As a result, MOOCs often fall short of the customization needs of specific cultures and institutions, making contextualization difficult (Czerniewicz et al., 2014).

In addition, the content and teaching methods of Western MOOCs do not always fit into the context of the adopting regions. For example, African teaching styles often contrast with the innovative and interactive methods employed in many MOOCs (Escher et al., 2014). Researchers at the University of Cape Town are challenging Africans themselves to create MOOCs about traditional philosophical concepts, which are uniquely African, in order to strengthen Africa's identity and voice on the global stage (Stam, 2013).

Overall, those who seek to integrate MOOCs into developing countries are left with a surprisingly multifaceted dilemma: whether to draw on the existing resources of Western MOOCs or to expend the substantial effort required to implement tailored solutions to the particular location.

2.2.4 Current MOOC Projects in Africa

Examining ongoing efforts to implement MOOCs in Africa provides a glimpse into the various strategies by which universities utilize MOOCs to reshape African higher education. For example, the World Bank's New Economy Skills for Africa Program-Information and Communication Technologies (NESAP-ICT) program in Tanzania supplements existing higher education courses with MOOCs from world leading universities to provide students with a higher quality education. The overall goal of the program is to offer tailored curriculum that improves the Information Technology (IT) skills of graduates and enables them to meet the needs of the Tanzanian job market (Escher et al., 2014).

While the NESAP-ICT program uses a blend of online and traditional classroom-based instruction, other ongoing efforts in Africa forgo face-to-face instruction almost entirely and choose to focus their resources on online courses. The Kepler project in Rwanda takes an innovative approach to higher education by building a campus entirely around MOOCs. Developed independently from existing higher education institutions, the Kepler project allows students to complete a four-year course of study using MOOCs from top universities. The Kepler project administrators specifically selected the MOOCs to meet the requirements of Rwandan students. Students in the program live and learn together and receive assistance from knowledgeable staff members (Escher et al., 2014).

Both the NESAP-ICT program and the Kepler project operate in close collaboration with businesses to ensure that course material aligns with the needs of future employers, and to offer internships to high-achieving students (Escher et al., 2014). The strategy of centralizing online learning programs in physical locations, as seen in the Kepler project, is gaining traction throughout Africa. This model provides students access to locations with the computer hardware to support online learning, as well as a community of learners who can support each other.

Another major effort in African eLearning is the African Virtual University (AVU), an organization dedicated to providing Africans with access to high-quality education through online learning. This organization, which operates a collaborative between the governments of 19 African countries, represents the largest network of Open Distance and eLearning (ODeL) institutions in Africa (AVU at a glance, n.d.). Since 2009, the AVU has been continuously launching ODeL Centers across Africa and as of 2017, has incorporated 53 partner institutions into its network. These ODeL centers provide a physical facility where faculty can participate in AVU eLearning training programs to learn more about utilizing distance learning in their institutions. AVU hopes that the ODeL centers will be self-sufficient and eventually have a positive return on investment, by enabling the sponsoring institutions to generate revenue from eLearning (ODeL centers launch*,* 2016).

In addition, with the vision of enhancing education and development in Africa through technologies, the International Conferences, Workshops, and Exhibitions (ICWE) hosts the eLearning Africa conference annually with collaboration from multiple African governments to share progress and advancements in eLearning (Duncan, 2014). In 2015, 1,389 educators and researchers attended the conference, from 68 different countries (eLearning Africa 2016 /

International Conference on ICT for Development, Education and Training, 2016). This conference represents the enormous interest and potential for future development in African eLearning.

2.3 Educational Resources in Namibia

To present the potential impacts of the implementation of MOOCs, this section will provide a brief history of Namibia's higher education system, Namibians' access to information and communication technologies (ICT), and eLearning adoption at NUST. NUST plans to incorporate MOOCs on soft skills into their curriculum and make the courses accessible to students worldwide. Educators at NUST consider soft skills valuable traits that make students more employable after graduation. In addition, a large sustainability movement at NUST is influencing the campus attitude towards resource conservation.

2.3.1 Higher Education System in Namibia

There are three universities in Namibia, two public and one private, namely: The University of Namibia (UNAM), Namibia University of Science and Technology (NUST) and the International University of Management (IUM). Prior to 1980, Namibia had no formal higher education opportunities for its citizens, and those who wished to pursue higher education had to travel to neighboring countries. The Academy for Tertiary Education, founded by Act No. 13 of 1980, established a university component, a Technikon, and College for Out-of-School Training under Act No. 9 of 1985. The Technikon offered a total of 17 diploma and certificate courses and the College for Out-of-School Training (COST) offered 13 certificated courses. It collapsed into two independent higher education institutions, a university and a polytechnic, shortly after Namibia gained independence in 1990. The university later became University of Namibia in 1992, and the Technikon and the COST merged to form the Polytechnic of Namibia in 1994. (NUST History, n.d.) In 2012, the Namibian Ministry of Education granted the Polytechnic of Namibia university status and approved its request for name change to Namibian University of Science and Technology (Polytechnic of Namibia Name Change, n.d.). Since the founding of UNAM, higher education in Namibia has expanded significantly. Starting with approximately

3,000 students, UNAM reached an enrollment of over 20,000 in 2015, including full-time, part-time, and distance education students.

In 2004, the Namibian government launched the "Vision 2030" initiative. The goal of Vision 2030 is to "improve the quality of life of the Namibian people to the level of their counterparts in the developed world, by 2030" (National Planning Commission, 2004). According to this initiative, Namibia needs to develop into an "innovative, knowledge-based society, supported by a dynamic, responsive and highly effective education and training system" (National Planning Commission, 2004). This aspect of Vision 2030 emphasizes improving the quality of education and raising the standard for educational institutions to match those in the developed world. In the light of this initiative, the Namibia universities are utilizing information and communication technologies and distance learning to improve the education quality in Namibia (Katjavivi, 2016).

2.3.2 Current eLearning at NUST

The Namibian University of Science and Technology (NUST) uses an eLearning platform to provide students with an opportunity to expand their learning outside the classroom. The platform, called MyNUST, allows students to access e-courses. These e-courses are an online component which is used in conjunction with the majority of classroom-based courses offered at the university. The e-courses allow students to view course materials, submit assignments and interact with other students online. Access to the currently available e-courses is exclusive to students enrolled in the respective courses, in contrast with MOOCs, which are larger in scale and open to a wider audience.

The TLU wishes to use MOOCs to improve students' soft skills. In particular, the TLU aims to help students master the "NUST graduate outcomes," a proposed set of soft skills that will make NUST students more employable in the workforce after graduation. The graduate outcomes include critical thinking, problem solving, communication, and writing. The TLU wants students to start developing these skills as soon as they enter NUST. To deliver these MOOCs, the TLU is utilizing a new lightweight eLearning MOOC platform. NUST utilizes the platform to deliver short-format MOOC content. The TLU designed the MOOCs to be concise and not interfere with students' academic schedules. Course topics include eLearning, Time

Management, critical thinking, interpersonal skills, and reflective thinking. The TLU launched two preliminary MOOCs, titled, *Technology to Foster Effective Learning,* and *Time Management.* These courses are also available to students around the world.

Technology to Foster Effective Learning trains students on how to effectively use the MyNUST eLearning platform. In the past, students sought support from TLU staff when facing difficulties with eLearning. The TLU designed the course to support students by addressing the majority of issues that students face on a day-to-day basis.

This MOOC covers the following topics:

- Resetting user password and email address
- Updating the eLearning profile
- Submitting assignments for courses
- How to collaborate with other students to contribute content to a Wiki
- How to build a MyNUST portfolio to reflect on the skills students have learned at NUST and showcase them.

Time Management is the first soft skill MOOC at NUST and teaches students how to effectively manage their time.

This MOOC covers the following topics:

- Goal setting
- Concentration
- Organization
- Task prioritization
- Effect of state of mind on productivity
- Schedule design

2.3.3 Sustainability at NUST

NUST is currently undertaking a sustainability initiative designed to help the university conserve its available resources including electricity, water, and paper. NUST is calling on students, faculty and departments to join this sustainability movement. Members of the NUST community can pledge to become a “sustainability partner” of NUST. These partners join the

university in its commitment to sustainability. They pledge to save water, electricity and paper, as well as to recycle and reduce their individual carbon footprint in order to safeguard their future and that of their children and grandchildren. In light of the pledge, many on-campus organizations are consciously trying to reduce their resource usage. The NUST administration believes this initiative will protect the future of the institution (NUST Sustainability Pledge, n.d.). As NUST further incorporates online content into traditional classes, the new focus on online learning could help to further this sustainability goal by reducing reliance on paper-based course materials.

2.4 Promotion of MOOCs

To effectively promote the launch of a MOOCs platform, it is necessary to understand effective promotional practices. Advertising is a key component of promotion. This section begins by discussing past research on the advertising preferences of university students, as well as factors that influence black South African millennials' attitudes towards advertising. It also covers best practices for new product launches and marketing methodologies, which adapt well to short timeframes and changing requirements. Finally, this section will discuss the current structure and protocol for promotion at NUST.

2.4.1 Promotional Methods on University Campuses

Researchers around the world have studied advertising techniques for targeting university students, and have found that recommendations from friends and family are the most effective in promoting to this demographic. The Refuel Agency College Explorer is a 2015 lifestyle study of 1,511 US university students between ages 18 and 34. As part of the study, researchers attempted to determine the most effective advertising techniques for targeting university students (Figure 2-3). Researchers asked students how much "attention they paid" to different forms of advertising. Paying "a lot" of attention means the particular advertisement has a high influence on their decisions while paying "a little" attention means the advertisement has some influence. Paying no attention means the advertising method has no influence at all. According to the study, 43% of students reported paying "a lot" of attention and 38% paying "a little" to recommendations

from friends and family. This implies that recommendation from friends and family influenced 81% of the students, making it the most effective advertising technique. After recommendations, researchers found television advertisements and samples to be the most effective methods of advertising (White, 2015). Another study administered by Service Management Group (SMG), an international customer research firm, also found that peers "heavily" influence university students (Fromm & Garton, 2013). Researchers at SMG found, "Most millennial and university consumers turn to friends before making a decision on a product or service" (Fromm & Garton, 2013). The information from these surveys assisted in determining the most efficient promotional methods for MOOCs at NUST.

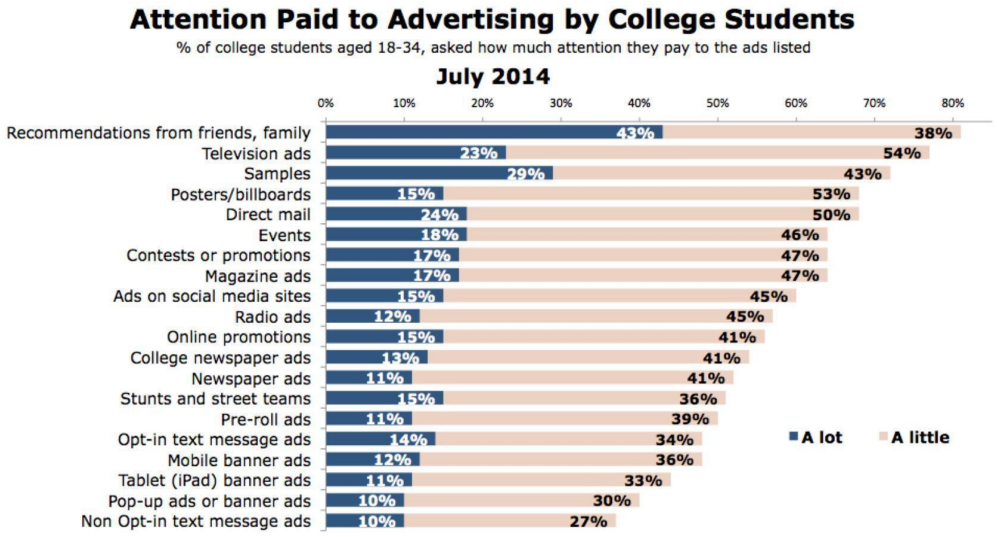

Figure 2-3: Attention paid to advertising by college students (White, 2015)

2.4.2 Factors that Influence Millennials' Attitudes Towards Web Advertising

Having grown up alongside the rise of the Internet and mobile devices, the millennial generation fluently speaks the digital language (Fromm & Garton, 2013). They are the most Internet-literate generation to date and lead the way in technology adoption (Ferguson, 2011). In order to effectively market to this generation, it is important to understand the factors that influence millennials attitudes toward Web advertising. In a 2013 study at North-West University in South Africa, researchers studied black millennial South African students' perception of advertisements on websites. Researchers distributed surveys to a random sample of

400 students across four South African universities. This source provides demographically relevant data to marketing at NUST, because it surveyed students in the same generation and geographical region of southern Africa. Based on previous research, the study identified five factors, which contribute to overall perceptions of Web advertising from the perspective of advertising consumers:

Informativeness refers to the degree to which the advertisement provides useful information to the consumer.

Entertainment refers to the pleasure experienced by consumers of an advertisement, which can contribute the emotional involvement felt by the consumer.

Irritation is the degree to which an advertisement disrupts a consumer's process of consuming a medium's content, typically seen in advertisements that are annoying, offensive, insulting, or manipulative.

Benefits refer to how well the advertisement portrays the advantages of the product to the consumer.

Credibility refers to how trustworthy and believable an advertisement appears to the consumer. The reputation of the medium that displays the advertisement can affect this attribute.

As seen in Figure 2-4, researchers concluded that the informativeness of a Web advertisement had the greatest positive effect on the target consumers' overall attitudes towards the advertisement's value. The advertisement's portrayal of the product's benefits followed closely behind. Credibility and entertainment had significantly lower positive effects on consumers' overall attitudes. Irritation had a negative, yet proportionally smaller effect on consumers' attitudes (Bevan-Dye, 2013).

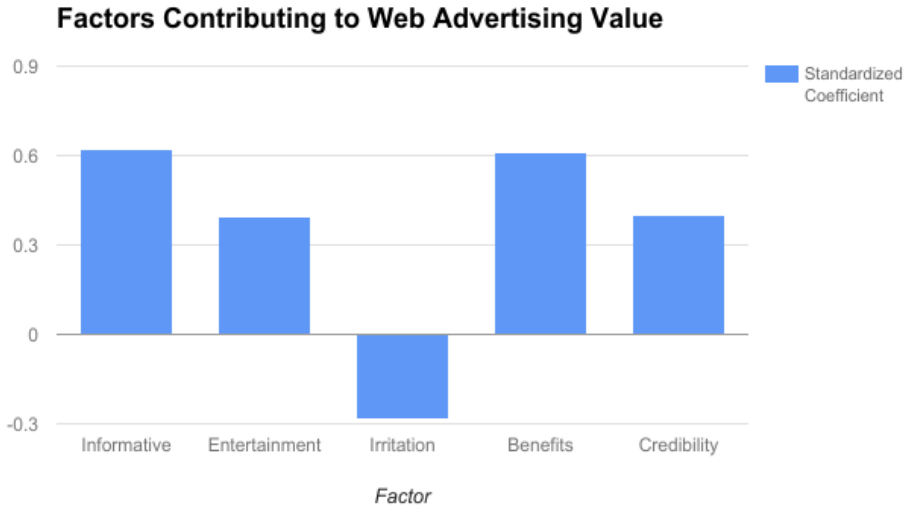

Figure 2-4: Factors Contributing to Web Advertising Value as Perceived by Black South African Millennial Students (Bevan-Dye, 2013)

2.4.3 Promoting a Successful Product Launch

A successful product launch revolves around customers. HubSpot, a successful marketing and sales software company, uses a defined and well-tested strategy to launch each new product that it develops. One of the first steps in the strategy involves creating rough preliminary messaging about the product and its value proposition in the pre-launch phase. Then, it is critical to create groups of early adopters to test the product. These groups, along with other key stakeholders, can provide critical feedback on the value proposition and other messaging. Once the producers adjust the messaging based on feedback from all the stakeholders, the next step in the plan is to develop creative marketing assets to spread this messaging and to choose the channels through which to promote the material (Andrews, 2016).

The marketing funnel is a model that describes the process through which marketers convert prospects into customers. Figure 2-5 illustrates one version of the funnel. First, prospective customers become aware of the product, and then they consider buying it and compare it to the alternatives, before they finally become customers. This model also introduces the concepts of customer loyalty, which represents repeat and long term customers, and

advocacy, in which the most loyal customers become advocates for the product and recommend it to others (Willits, 2016).

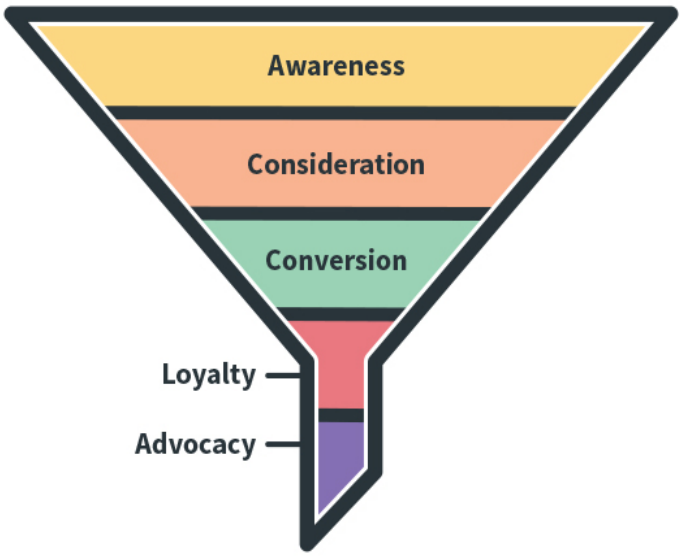

Figure 2-5: The Marketing Funnel.(Willits, 2016)

HubSpot suggests that multiple "touchpoints," or interactions between the seller and potential customer, are often necessary to convince someone to try a new product. Utilizing a single promotional channel may serve to make a potential customer aware of the product, but is often insufficient to move them down the funnel and convert them into a customer. Rather, it is important to utilize several complementary promotional channels that work together to convert customers. Examples of channels include social media, email and print communications. HubSpot also cautions that utilizing as many channels as possible is an ineffective approach. It is better to choose a few channels that complement each other and effectively reach the target market. In the "loyalty" and "advocacy" phases of the funnel, the design of the product itself plays a larger role in retaining customers (Andrews, 2016).

HubSpot's strategy also uses events to support product launches. Events can be a powerful method for building awareness and connecting with the target market in a personal and informative way (Andrews, 2016). Other product-marketing experts echo this sentiment, saying that events are "an excellent way to get the media and your audience to take [the product] more

seriously" (Barker, 2016). According to a study on successful product launches, market education plays a significant role in launches for products with which the target market is unfamiliar. In this case, seminars, lectures, and demonstrations can play a major part in educating a market on the product and the benefits it brings. These educational tactics are strongest when they not only build awareness of the product but also portray a vision for the future that this product can bring (Beard & Easingwood, 1996). MOOCs are a new product for NUST and the other Namibian universities. As a result, the marketing plan for this project may benefit from a significant educational component in order to teach students and faculty alike about MOOCs and the TLU's vision for the benefits of MOOCs for Namibia as a whole in years to come.

2.4.4 Incorporating Agile Principles

When working with short timeframes and constantly changing requirements, project teams must be able to adapt quickly. This is especially true of teams that are working in unfamiliar environments, where it is crucial to be able to refine the product rapidly based on new information gathered. Depicted in Figure 2-6, the stage-gate model is a traditional product delivery process. It describes the process of developing an idea into a delivered product (Karlström & Runeson, 2005) with five stages: scoping ideas, building business cases, development, testing, and launching. Project teams typically complete these phases sequentially, and then review the product at the end of all five stages. The rigidity of this standard product development process makes it difficult for teams to adapt to changing requirements, especially in short timeframes.

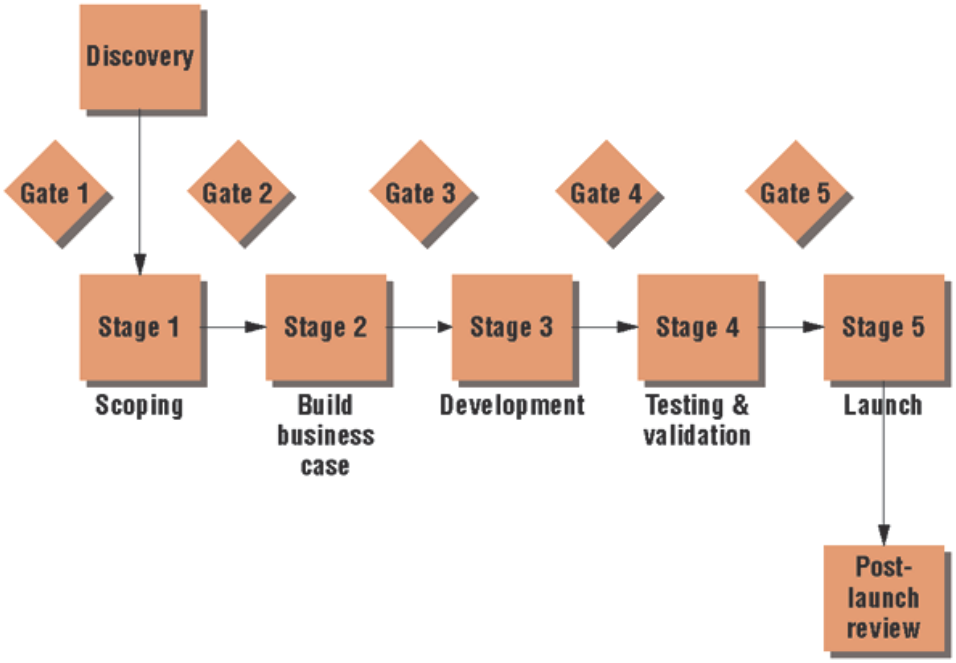

Figure 2-6: Stage-gate project management model (Karlström & Runeson, 2005)

In contrast with traditional product delivery processes, such as stage-gate, "Agile" principles advocate for adaptive planning, iterative development, and continuous improvement (see Figure 2-7). Agile originated in software development, but a wide range of industries can apply its principles. Scrum is a popular framework that enables project teams to implement Agile principles. In the Scrum method, a team divides the development lifecycle into one-week or two-week iterations (*Scrum sprint*., 2010), with each iteration focusing on a certain subset of features to implement or defects to fix in the product. Every iteration begins with an iteration planning meeting to gather ideas and prioritize tasks. During the iteration, team members check in with each other through daily scrum meetings, called standups. After the iteration execution, the team demonstrates the potential deliverable product during an iteration review meeting and reflects on the progress and team dynamics through an iteration retrospective meeting (*Scrum sprint*., 2010).

The Agile process enables users to produce a first draft of a product in a couple weeks and receive immediate feedback that a team can use to improve each subsequent version of the product. This method is ideal for projects that require several versions or iterations and is more effective than waiting for months for updates on a flawed version of a product. Agile increases productivity, creativity, and flexibility within project teams (Sussex, 2014). In one study, 90% of

participants said that using Agile practice improved their ability to manage changing priorities and 84% claimed it improved their project visibility (Rodriguez et al., 2012). Marketing and promotional strategies, when combined with Agile, can work more effectively and adapt more quickly to market changes and customers' needs (Ewel, 2014).

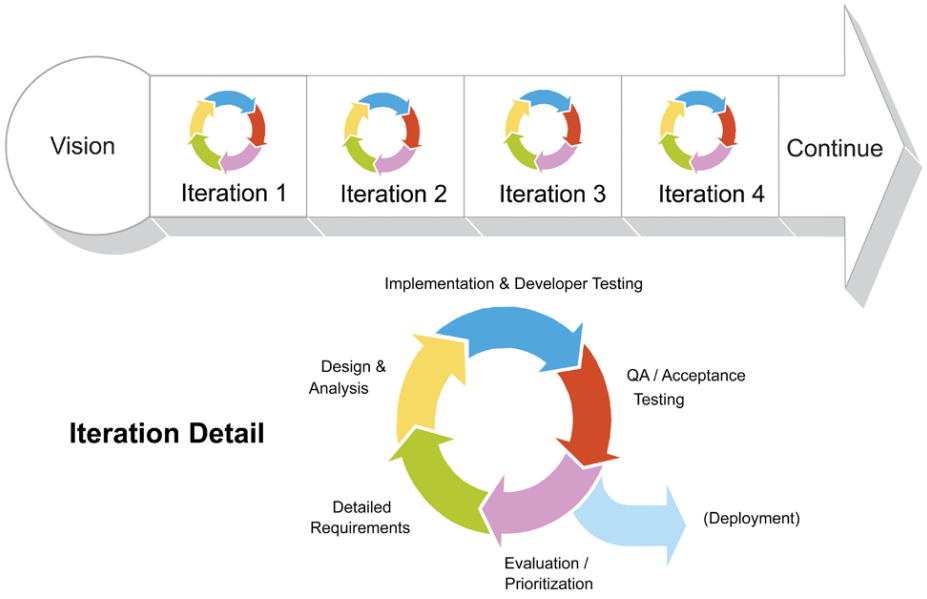

Figure 2-7: Scrum Blends All Development Activities into each Iteration, Adapting to Discovered Realities at Fixed Intervals. (James, n.d.)

2.4.5 Promotional Resources at NUST

Several key NUST faculty members coordinate promotion on the NUST campus. All promotional materials distributed on campus must go through the approval process of the NUST marketing department. The Brand Champion oversees all promotional material created at NUST to enforce consistent official NUST branding regulations. These regulations include proper use of the official NUST logo and the formal template for visual designs. Only when the promotional materials satisfy the branding regulations can the marketing department and other personnel publish them. Employees within the NUST marketing department can post approved NUST materials on the official NUST social media pages. The Brand Champion monitors the content posted on all official NUST Facebook pages to ensure proper use of NUST materials.

Student representative council (SRC) oversees various aspects of student life at NUST, including sports, culture, academic affairs, and internal events. The SRC also shepherds promotion on campus. The SRC approves, stamps, and distribute printed posters around NUST campus for both internal and external events.

The NUST marketing department helps set up "activations" or outdoor demonstrations on campus. Any organization that desires to promote an event or service can host activations. To attract attention from students, activations typically take place in outdoor common areas on campus. In addition, the NUST marketing department oversees the Student Brand Ambassadors (SBA), a student group at NUST that serve as representatives for the university brand. The SBA promotes important campus events through "lecture bombs," in which SBA members coordinate a short interruption in a particular lecture to deliver the information.

The university's online radio station, NUST FM, also plays a major role in campus promotion. Through the radio station, NUST FM spreads information about other campus organizations and events. They also have a large following on social media, on which they use to further their promotional efforts.

2.5 Summary

By researching the benefits and challenges of MOOCs as well as potential barriers to adoption in developing countries, the team gained a better understanding of key considerations to make when promoting MOOCs at NUST. The information learned about promoting product launches and utilizing the marketing funnel directly influenced our promotional strategy.
The project considered the knowledge gained in the background chapter when designing the methodology for this project.

CHAPTER 3: METHODOLOGY

The goal of this project is to assist the Teaching and Learning Unit (TLU) of the Namibia University of Science and Technology in promoting the launch of two MOOCs at the university by using a pilot study to implement an effective promotional strategy and to utilize performance tracking to assess promotion success.

The objectives of the project are as follows:

1. Establish connections with NUST staff and student volunteers
2. Develop promotional materials
3. Engage with a pilot group to obtain and analyze feedback
4. Refine and release promotional materials
5. Assess promotion success through performance tracking

The project focused on promoting the TLU's two preliminary MOOCs: *Technology to Foster Effective Learning* and *Time Management* which launched on April 5, 2017 and April 18, 2017 respectively. The promotional strategy consisted of multiple complementary promotional methods. The incorporation of Agile principles aided the process of implementing the promotional strategy as Agile adapts well to the brief timeframes and frequent changes anticipated in this project. This process functioned as a feedback loop in which the project iterated through Objectives 2 through 4 repeatedly (Figure 3-1). The project consisted of two three-week iterations, or repeated work cycles, that began on March 15, 2017. At the beginning of each iteration, the team chose three to five promotional materials to develop for the duration of the iteration. Then the project sought qualitative and quantitative feedback from a student pilot group. Based on the feedback received for each promotional material, the team decided whether to release or delay the material until the next iteration for further refinement. The following sections cover the details of this process. The Gantt chart in Figure 3-2 shows the iteration over Objectives 2 through 4 during the two work cycles.

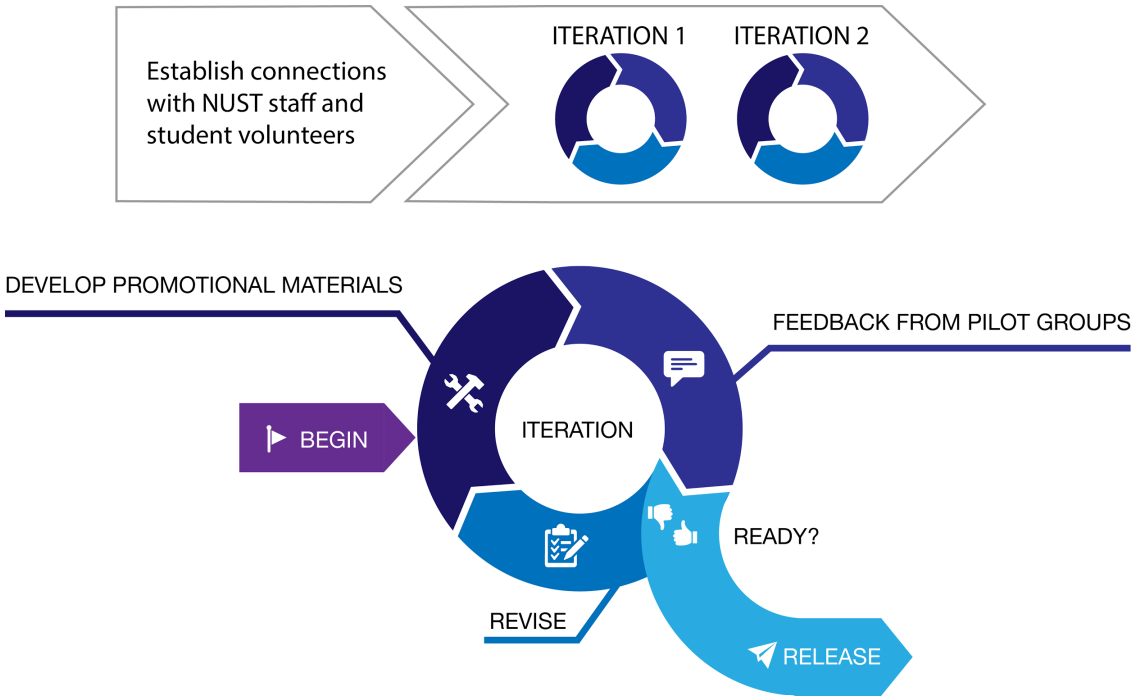

Figure 3-1: Project Iteration Cycles

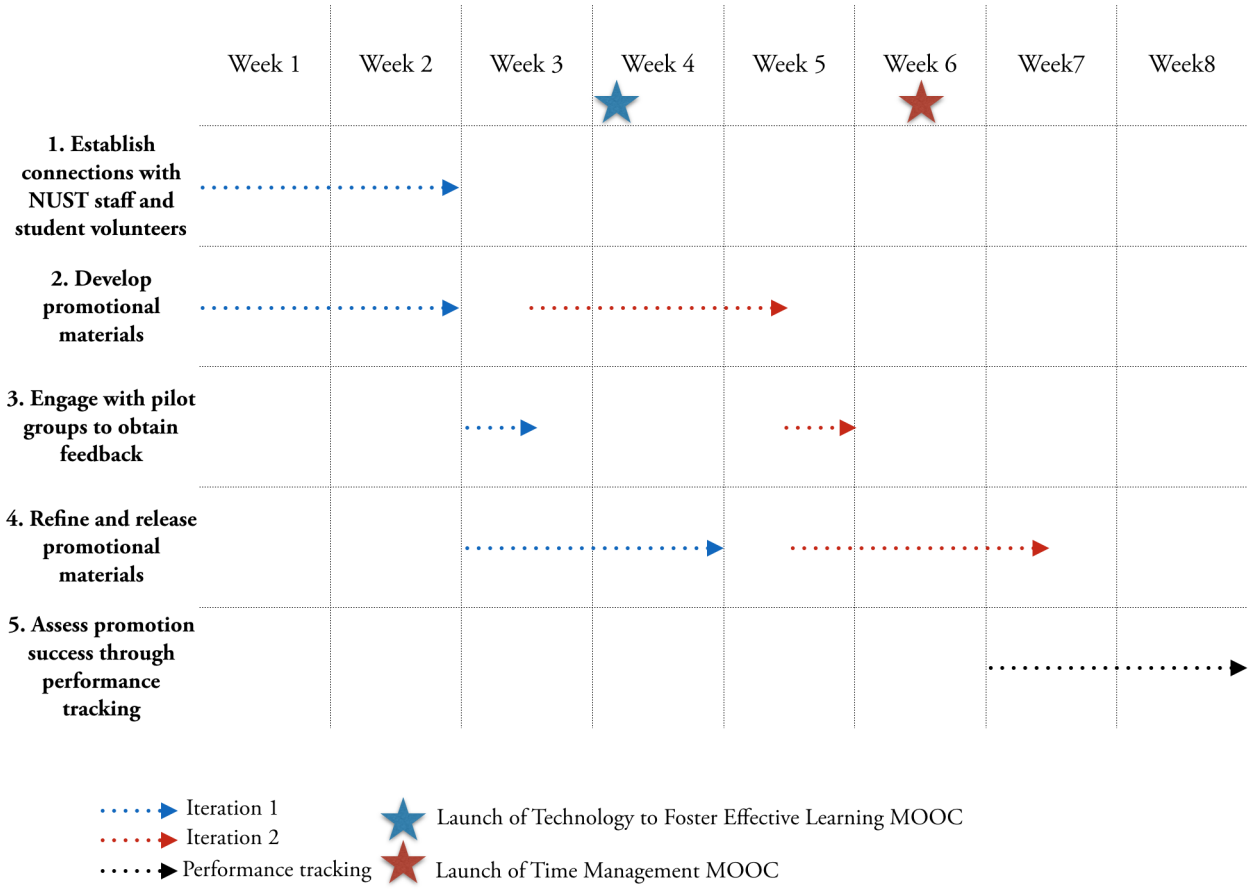

Figure 3-2: MOOCs Gantt Chart with Two iterations

3.1 Establish Connections with NUST Faculty and Student Volunteers

During the first two weeks on site, the team initiated contact with members of the NUST community with influential positions in promotion at NUST. The project used an unstructured interview format in order to facilitate active collaboration when interacting with community members. In addition, with the aid of the TLU, the team used two sampling methods to recruit student volunteers with diverse background. These student volunteers formed a pilot group that provided feedback on the promotional materials the team developed. The initial connections with key members of the NUST community provided details on the resources available at NUST and formed the basis for the implementation of the promotional plan in later objectives.

3.1.1 Initial Interviews with NUST Organizations

To determine the guidelines and effective methods for promotion at NUST, the team interviewed representatives from NUST organizations involved with promotion on campus. The sponsor liaison, Maurice Nkusi put the team in contact with the student governing body, the Student Representative Council (SRC). The SRC identified further contacts that could help advance the project. The team continually asked for further contacts relevant to promotion after each interview in order to organically build up a network of key departments and organizations which worked together to develop the promotional strategy.

The project used an *unstructured interview* format when interviewing initial contacts at NUST. Because this project focused on implementing a final promotional strategy, it was important to actively collaborate with the NUST community members, rather than simply conduct a one-sided interview. In addition, because there was a large amount of unknown information, it was often more productive to approach a meeting with basic discussion points and with open minds. Thus, the interviews functioned as collaborative meetings in which both parties contributed to an overall deliverable. This format allowed the team to speak with interviewees more freely and ask questions as they arose instead of having a predetermined set of questions. This unstructured interview process often led to new realizations and lasting connections with the interviewees.

Interviews for this project followed a standard protocol. The team held three interviews and all four team members were present at each which helped create familiarity between the interviewees and the team. At each interview, one team member facilitated the meeting and another recorded information. The other two asked follow-up questions.

After each interview, the team debriefed and compared notes to ensure that all team members interpreted the interview in the same way.

3.1.2 Recruit Student Volunteers for Pilot Group

With the assistance of the TLU, the project team recruited student volunteers to serve in the pilot group. Due to the small size of the pilot group, it was important to include students from diverse academic backgrounds and different class years to represent the NUST student body as accurately as possible (List, 2012). In this project, the team aimed to select subjects from each of the six departments at NUST:

1. Computing and Informatics
2. Engineering
3. Health and Applied Sciences
4. Human Sciences
5. Management Sciences
6. Natural Resources and Spatial Sciences

The TLU contacted all six department heads to nominate two students with an interest in participating in the project. This sampling method helped to create a pilot group consisting of students from different areas of study. After receiving contact information for the nominated students, the team scheduled informal meetings with the students in small groups based on availability. These meetings allowed for casual introductions to the project, and enabled the team to gather further contact information and availability for each volunteer. In the case that not all nominated students joined this project, the team would recruit more students through snowball sampling, a nonprobability sampling technique where existing study subjects nominate future subjects from among their acquaintances (*Snowball Sampling.,* n.d.). Snowball sampling was beneficial as it resulted in a higher number of students participating in the pilot group. However, this method might have hindered the goal for diverse students, as it might be more likely that students were acquainted with others in the same area of study or same year. As further explained in Section 4.1.3, the project recruited a total of 9 pilot group students.

3.2 Develop Promotional Materials

The team recruited the pilot group and developed preliminary promotional resources simultaneously. A decision matrix aided in the process of selecting promotional methods. Based on the input from key NUST community members and pilot group students, along with research on advertising preferences of black South African university students (Section 2.4), the project created a list of potential promotional methods.

For the purposes of this project, the term "promotional method" refers to any general technique for promotion. A "promotional material" is a specific, physical implementation of a promotional method. A "promotional channel" is a means through which the team can release promotional materials. The specific combination of promotional materials and channels utilized represents the promotional strategy. As a theoretical example, the team decides to utilize the ***promotional method*** of a digital poster. They do so by creating a specific ***promotional material***--a digital poster, portraying the benefits of time management skills. Then the team releases the material through the ***channels*** of email and Facebook. This implemented material, in conjunction with many more, represents the overall ***promotional strategy*** for the project.

3.2.1 Selection of Preliminary Promotional Materials

To aid in the selection of preliminary promotional materials to develop, the team created a decision matrix to compare the attributes of potential promotional methods (Table 3-1). The decision matrix summarizes the information the team collected based on background research and meetings with NUST community members on effort and resources required to implement these methods. Using results gathered from key members of the NUST community, as discussed in Objective 1, the team completed the decision matrix. This matrix includes physical resources and approval required, as well as estimated effort to produce the material. This tool also provided insight into how different promotional methods complement each other, and aided in choosing materials to develop during an iteration. Promotional methods were complementary if they allowed for touch points across different types of promotional channels. For example, the project considered face-to-face and digital promotional methods to be complementary because they create the potential for interaction with the target audience through two completely different promotional channels.

For each iteration, the project chose promotional materials that would form a well-balanced promotional strategy in addition to the time constraints within each iteration. A well-balanced promotional strategy incorporates multiple complementary promotional methods rather than just one. This increases the likelihood that there will be multiple touchpoints, or interactions between the promotional materials and the target audience. This repeated interaction should move students further down the marketing funnel (Figure 2-5) and convert them into MOOC users.

Table 3-1: Decision Matrix for Potential Promotional Methods

Method	Required Resources	Est. Effort (Scale 1-5)	Utilized in Promotional Strategy?
Printed Posters	**1.** Graphical design software **2.** Approval of NUST Brand Champion **3.** Printer **4.** Stamp of approval by SRC	3	
Online Posters	**1.** Graphical design software **2.** Access to social media channels **3.** Approval of NUST Brand Champion	2	
Short Promotional Videos	**1.** Camera and microphone **2.** Video editing software	4	
Testimonials Video	**1.** Camera and microphone **2.** Video editing software	4	
Email Announcements	**1.** Access to mailing lists or newsletters	2	
Seminars / Presentations	**1.** Venue (through SRC) **2.** Promotion for the events	3	
MOOC Platform Tutorial	**1.** Video editing software, screen recording software, microphone	4	
Lecture Pitches	**1.** Cooperation of NUST lecturers **2.** Student Brand Ambassadors	2	
Online Radio Broadcast	**1.** Cooperation of NUST FM staff	2	
SMS Announcements	**1.** Point of contact for SMS Announcements **2.** Budget from TLU	1	
Printed Brochures / Flyers	**1.** Design software **2.** Printer	3	

Key	Print	Digital	Face-to-Face

3.2.2 Development of Promotional Materials

At the beginning of each iteration, the team chose a variety of promotional materials to develop based on the estimated effort, available resources, and recommendations from pilot group student volunteers and NUST staff. The project chose three to five promotional materials for each iteration, and attempted to select complementary promotional materials that could utilize a variety of promotional channels. The team also accounted for the release dates of the

two MOOCs and by focusing on developing materials for *Technology to Foster Effective Learning* before *Time Management*. When developing visual promotional materials such as posters and videos, the team followed the NUST branding guidelines provided by the NUST Branding Department (Appendix C.3).

This process followed HubSpot's product launch strategy and enabled the team to build up creative promotional assets before all the necessary information was available (Andrews, 2016). This project utilized a continuous development process with the materials released forming an overall cohesive promotional strategy.

3.3 Engage with Pilot Group to Obtain and Analyze Feedback

A pilot study is a trial run of a larger project that can help identify potential problems and prevent them from escalating before the full implementation. Before releasing the promotional materials, pilot testing facilitates the following:

1. Confirming whether the promotional strategy is ready for full-scale implementation
2. Gauging the target population's reaction
3. Making better decisions about time and resource allocation
4. Refining metrics that measure the success of the promotional strategy (The National Campaign to Prevent Teen and Unplanned Pregnancy, n.d.).

3.3.1 Plan and Design the Pilot Study

The team selected five criteria on which to evaluate the promotional materials in the pilot study:

1. *Informativeness*: How well the material conveys the information to the consumer
2. *Entertainment*: The extent to which an advertisement appeals to consumers' needs for passing time, emotional release or aesthetic enjoyment
3. *Irritation*: The resistance of the consumer to viewing the material because of annoyance
4. *Benefits*: How accurately the material describes the benefits of the product
5. *Credibility*: How trustworthy and dependable the material appears to the consumer.

The team selected these criteria based on factors that affect black South African millennial students' attitudes towards web advertising, according to a study at North-West University in South Africa (Bevan-Dye, 2013). This study provided the most demographically relevant data available. To effectively evaluate the above promotional material attributes, the team demonstrated the MOOC to the pilot group students. Familiarizing the pilot group students with the MOOCs enabled them to provide clearer feedback, especially on informativeness and benefits of the promotional materials. Figure 3-3 provides a visual representation of this process.

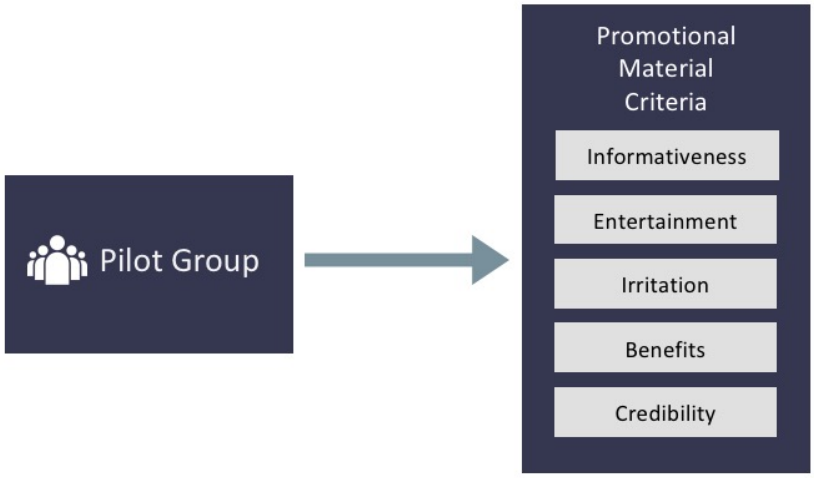

Figure 3-3: Pilot Group Feedback Criteria

This study used anonymous questionnaires and group discussions to gather information from the pilot group. The team believed the study would benefit from group discussion in that face-to-face communication personally engages participants of the conversation and encourages qualitative real-time responses (The Importance of Face-To-Face Communication, 2013). The team obtained quantitative feedback from the scorecards distributed to the pilot group. Appendix A.3 contains the scorecard that evaluates the promotional materials on the chosen five criteria. Each question on the scorecard maps to one of these criteria. Anonymous questionnaires can provide a comfort zone for individual group members to express their honest opinions by granting privacy.

3.3.2 Conduct Pilot Study

This study consisted of one pilot group evaluation for each of the two iterations. The first evaluation contained four major steps:

1. The pilot group students completed a questionnaire (Appendix A.1) during the Iteration 1 meeting so the team could understand the background of individual group members.
2. The team presented the MOOC to the students and engaged them in discussion (Appendix A.2) to obtain their ideas for promoting the MOOC.
3. After the discussion, the team presented their promotional materials and asked the pilot group participants to fill out an individual scorecard (Appendix A.3) for each material to evaluate its readiness for release.
4. Another discussion followed (Appendix A.5) to examine methods for improving each promotional material.

Appendix A.6 contains the meeting agenda for the first meeting. Figure 3-4 illustrates the planned flow of the first pilot group evaluation. The second pilot group meeting consisted of steps 3 and 4 only.

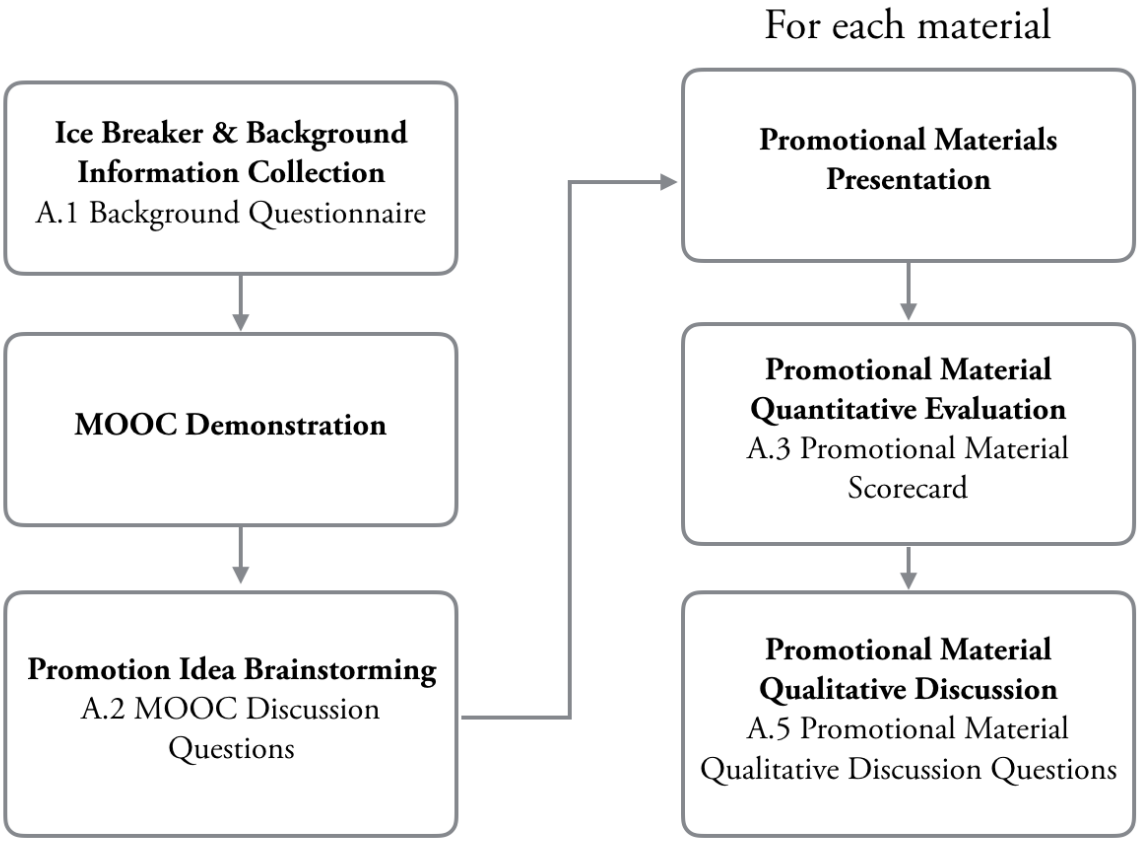

Figure 3-4: First Pilot Group Meeting Flow

3.3.3 Evaluate Pilot Study Results

In order to evaluate the results of the pilot group, the team again utilized the study on black South African millennial students' attitudes towards web advertising (Bevan-Dye, 2013) to assign relative weights to each of the five criteria for promotional material evaluation. The weight assigned to each criterion represents the individual contribution of each factor as found by the study. Specifically, the team based the weights on the standardized beta coefficient from the study's regression model summary (Table 3-2). These standardized coefficients indicate the relative significance of each factor affecting black South African millennial students' attitudes towards web advertising and thus are suitable weights to use for the calculation (Bevan-Dye, 2013).

Table 3-2: Black South African Millennial Students' Attitudes towards Web Advertising Beta Coefficients (Bevan-Dye, 2013)

Criterion	Beta Coefficient
Informativeness	0.621
Entertainment	0.393
Irritation	-0.282
Benefits	0.608
Credibility	0.399

To ensure the positive correlation between the overall score and the readiness of developed promotional materials, the team inverted the attribute "Irritation" from weight -0.282 to "Non-irritation" to obtain a positive weight of 0.282.

The team then scaled the weights so that all the averaged weights summed to one (Table 3-3). The scaled weight vector contained these five weights. Each set of quantitative questionnaire results thus has a scaled weight vector W:

$$\text{Scaled weight vector: } W = [w_1\ w_2\ w_3\ w_4\ w_5]$$

Table 3-3: Pilot Group Weight Table

Criterion	Weight	Scaled Weight
Informativeness	0.621	0.270
Entertainment	0.393	0.171
Non-Irritation	0.282	0.122
Benefits	0.608	0.264
Credibility	0.399	0.173
Total:	2.303	1

$$W = [0.270 \;\; 0.171 \;\; 0.122 \;\; 0.264 \;\; 0.173\,]$$

In order to determine when a promotional material was qualified for release, the project utilized data received from the pilot group from the scorecard on a five point scale shown in Appendix A.3 and calculated a readiness indicator from the data. Since the third question maps to the criterion "Irritation", the team also inverted the scores obtained from the third question to match the weight for "Non-irritation". For example, if the third question scored two (disagree) for irritation, then the score for non-irritation became four (agree). After performing the score flip for all the scores on question three, the team calculated the averages of the total scores for each of the five questions among the pilot group members.

Average score vector: $S = [s_1\ s_2\ s_3\ s_4 s_5]$

The research used a dot product to calculate the promotional material readiness indicator R.

$$R = S \cdot W = s_1 \times w_1 + s_2 \times w_2 + s_3 \times w_3 + s_4 \times w_4 + s_5 \times w_5$$

If a promotional material received a readiness indicator of 3.5 or higher, the project considered it ready for release. The team chose this number because 70% is a common threshold for a passing grade. While it was difficult to justify the 70% passing threshold with absolute certainty without running a large number of tests, the project determined that the system as a whole did differentiate between clearly poor or well-designed promotional materials. To do this, the team purposefully designed a "dummy" poster with the expectation that it would receive a lower score in the pilot group evaluation.

3.4 Refine and Release Promotional Materials

After the team calculated the readiness indicator for each promotional material developed in a given iteration, the project used that information to decide whether to release or refine the material. To make this decision, the team considered the readiness indicator, the amount of time it would take to improve that material, and the qualitative feedback given by the pilot group. If the pilot group indicated that a small fix would improve a given promotional material, the team decided to make that fix immediately to get the material ready for release in the current iteration.

If the indicator was lower than 3.5, and the team determined that the promotional material required significant revision, the team revised and developed it in the next iteration. Each promotional material developed in a given iteration received independent consideration.

The team also chose appropriate promotional channels through which to release the materials to the NUST student body. Some materials, such as a transcript for an SMS message, only had one possible promotional channel for release. Others, such as posters, could reach students digitally through Facebook and email, and physically via paper copies on campus. Figure 3-5 summarizes the complete iteration flowchart.

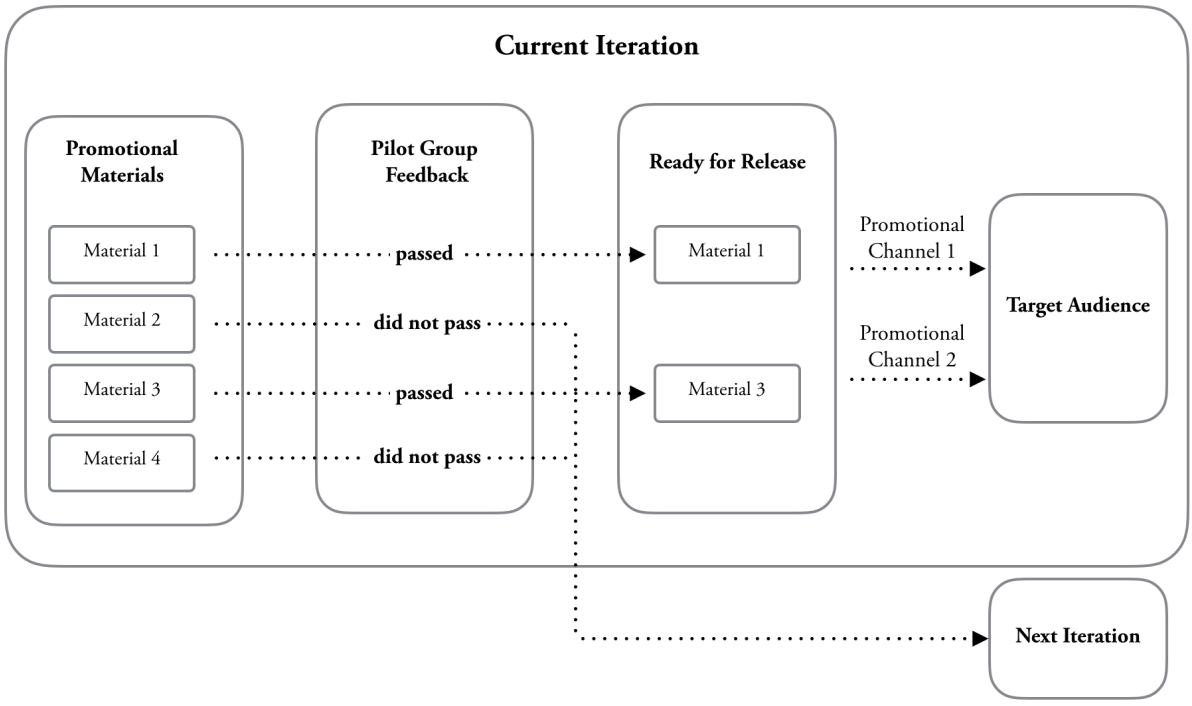

Figure 3-5: Theoretical Iteration Flowchart for Promotional Materials

The project followed this flowchart to maximize efficiency by working within a tight feedback loop to adapt the promotional materials to fit within the Namibian context and to address the target market. This process also addressed the TLU's need for promotion before and

after the launch of each MOOC. Instead of waiting for all the promotional materials to be ready for release, this continuous delivery process ensured that promotion was an ongoing effort.

3.5 Assessing Promotion Success Through Performance Tracking

In addition to implementing the promotional strategy, the team assessed its effectiveness using several metrics and the concept of the marketing funnel. This investigation identified the most effective promotional methods and recommended a refined promotional strategy based on the findings. The team recommended that the TLU use this refined promotional strategy to promote future MOOCs.

In order to gather more information on the relative performance of each promotional channel used, the team utilized the following one-question survey, given to new users on the MOOC platform:

How did you hear about the MOOC platform?
Check any that apply:

- ❑ Facebook
- ❑ SMS Announcement
- ❑ Twitter
- ❑ Pamphlet
- ❑ Radio
- ❑ Lecture
- ❑ Seminar
- ❑ Friends
- ❑ Email

  Other: _____

New users who register on the MOOC platform must request an account from the TLU by completing a short online registration form with their personal information, contact details and field of study (Appendix D). The team integrated the above question into the registration

form to ensure that new users on the MOOC platform provided feedback on how they discovered the platform.

In addition, the project used *Bitly.com*, a URL shortener and analytics website, to create shorter, trackable versions of the registration page URL. For posters, team also used Quick Response (QR) codes to link to the same short URLs. QR codes are a form of two-dimensional barcode which can be scanned by a smartphone. Through this process, each promotional material contained a unique short URL and posters also contained a corresponding QR code. Interested students could either type the short URL into their browser or scan the QR code. *Bitly* allowed the team to track the number of visits on the registration form originating from each material.

In the long term, the TLU wishes for the MOOCs to educate students from NUST and around the world. Since this was the first MOOC project at NUST, it was unclear what the rate of adoption would be. Additionally, it was also difficult to estimate concrete benchmarks for successful promotion in the context of NUST because there were no prior promotional campaigns with which to compare. Regardless, a well-functioning promotion strategy would show signs that students were moving down the marketing funnel from the Awareness phase into the Conversion phase (Willits, 2016). At the end of each iteration, a compilation of the data for various metrics indicated the effectiveness of the promotion strategy. These metrics corresponded to each phase of the marketing funnel. The metric structure was as follows:

Awareness

The Awareness phase tracked impressions, or the number of times an advertisement appears in front of a potential customer. Impressions do not specify if the potential customer paid significant attention to the advertisement, only that the interaction occurred.

- Number of impressions on social media - number of times a post appeared on unique users' newsfeed
- Number in-person impressions - number of students spoken to in-person
- Estimated impression on radio - number of listeners who heard the radio advertisements

Consideration

- Number of users who visited the registration page

Conversion

- Number of users who registered for the MOOC platform

Loyalty

- Number of users who began one of the MOOCs
- Number of users who completed one of the MOOCs

Advocacy

- Social media shares
- Number of users who indicated on the MOOC survey that they found out about the MOOCs by word of mouth

The findings of this investigation mainly focused on the Awareness, Consideration, and Conversion phases of the marketing funnel. The promotional strategy had a significant impact on performance in the Awareness and Consideration phases. However, performance in the Conversion phase depended not only on the promotional strategy but also on the design of the registration page, making it more difficult to control than the first two phases. Likewise, the Loyalty and Advocacy phases depended primarily on the design of the MOOC platform and the MOOCs themselves. The team evaluated the effectiveness of the Awareness and Consideration phases for each promotional method by recording and ranking the number of impressions and registration page visits. The team also considered the time and effort that went into implementing the promotional methods and recommended a promotional strategy consisting primarily of the most time-efficient methods in the Awareness and Consideration phases. The refined strategy also included recommendations for secondary methods, which were effective, but not as time-efficient.

3.6 Methods Summary

To maximize the effectiveness of the promotion of two MOOCs at NUST, this project engaged with a student pilot group from NUST. The project team selected promotional methods and then developed promotional marketing materials to distribute through different promotional

channels. The feedback from the pilot group contributed to the refinement and release of these promotional materials in two iterative cycles. Finally, the project focused on assessing the performance of the different promotional methods and using the findings to recommend an improved promotional strategy for future use. This careful pre-planning facilitated the success of the project in later phases.

CHAPTER 4: RESULTS AND ANALYSIS

This chapter reviews the results the team gathered at the Namibia University of Science and Technology through unstructured interviews, a pilot group study, and performance tracking of promotional materials. The findings from this investigation include insights into the promotional atmosphere at NUST, pilot group feedback on the promotional materials developed, and analysis of the effectiveness of different promotional methods.

4.1 Unstructured Interviews to Determine Promotional Atmosphere at NUST

To understand the promotional atmosphere at NUST, the project team met with representatives from key NUST organizations including the Student Representative Council (SRC), the online campus radio station (NUST FM), as well as four of the nine pilot group volunteers and the Brand Ambassador of the Month Committee (BAM). These individuals introduced the team to the culture of NUST and provided vital information on standard procedures for promotion on campus.

4.1.1 Interview with Student Representative Council

The team interviewed Lilogene Unoovene, the External Affairs Chair of the Student Representative Council (SRC) on March 16, 2017. The purpose of the interview was to make initial contact with the governing student body and learn about typical promotional methods utilized at NUST. According to Mr. Unoovene, since a majority of NUST students have Facebook accounts, Facebook may be one of the most effective methods of spreading information on campus. He also mentioned that Facebook promotional videos might be an entertaining promotional method. At the time of the meeting, the official NUST Facebook page had over 30,000 likes from members of the NUST community. As reported by Mr. Unoovene, most students prefer to use their personal email addresses rather than their NUST email addresses, and as a result, students seldom receive information through email. He further suggested utilizing the campus wide SMS announcement system, the online radio station (NUST FM), and distributing informational pamphlets to students during their lunch break. Unoovene remained in contact with the team and assisted in later phases of the project. The notes from this meeting are located in Appendix B.2.1.

4.1.2 Interview with NUST FM

On March 22, 2017, the team interviewed Ms. Vivette Ritmann, the Station Captain, and Ms. Wilhelmina Abraham, the Communications Chair of NUST FM, to discuss the possibility of promoting the two MOOCs by using the online radio station and its social media accounts as promotional channels. Ms. Ritmann offered the options of hosting a live interview with the team and running periodic advertisements on the online radio station. She also mentioned that a foreign accent might attract students' attention. Ms. Abraham advised using NUST FM's social media accounts, as they have over 15,000 followers on Facebook, Snapchat, Twitter, Instagram and YouTube combined. In addition, Ritmann suggested that the following points of contact might be helpful to the project:

1. Student Brand Ambassadors (SBA) – A group of students that act as representatives for the NUST brand. They visit ongoing lectures to inform students about new changes and opportunities on campus (called "lecture bombs").
2. Brand Champion – An individual who ensures that published communications are consistent with the overall NUST brand.
3. NUST Division of Communications and Marketing – A division that manages the NUST social media pages.

After the meeting, Ms. Abraham organized a campus tour to familiarize the team with the campus and its social atmosphere. The team gained insight about popular locations with significant pedestrian traffic that could potentially become sites for promotion. The two kiosks attract a large number of students during the lunch break. The auditorium building, on the Engineering Campus contains some of the largest auditoriums and therefore has significant student traffic. Figure 4-1 shows a map of these locations at NUST, according to Ms. Abraham. Each of the three individual stars represents one of the popular locations. Appendix B.2.2 shows the detailed notes from this meeting.

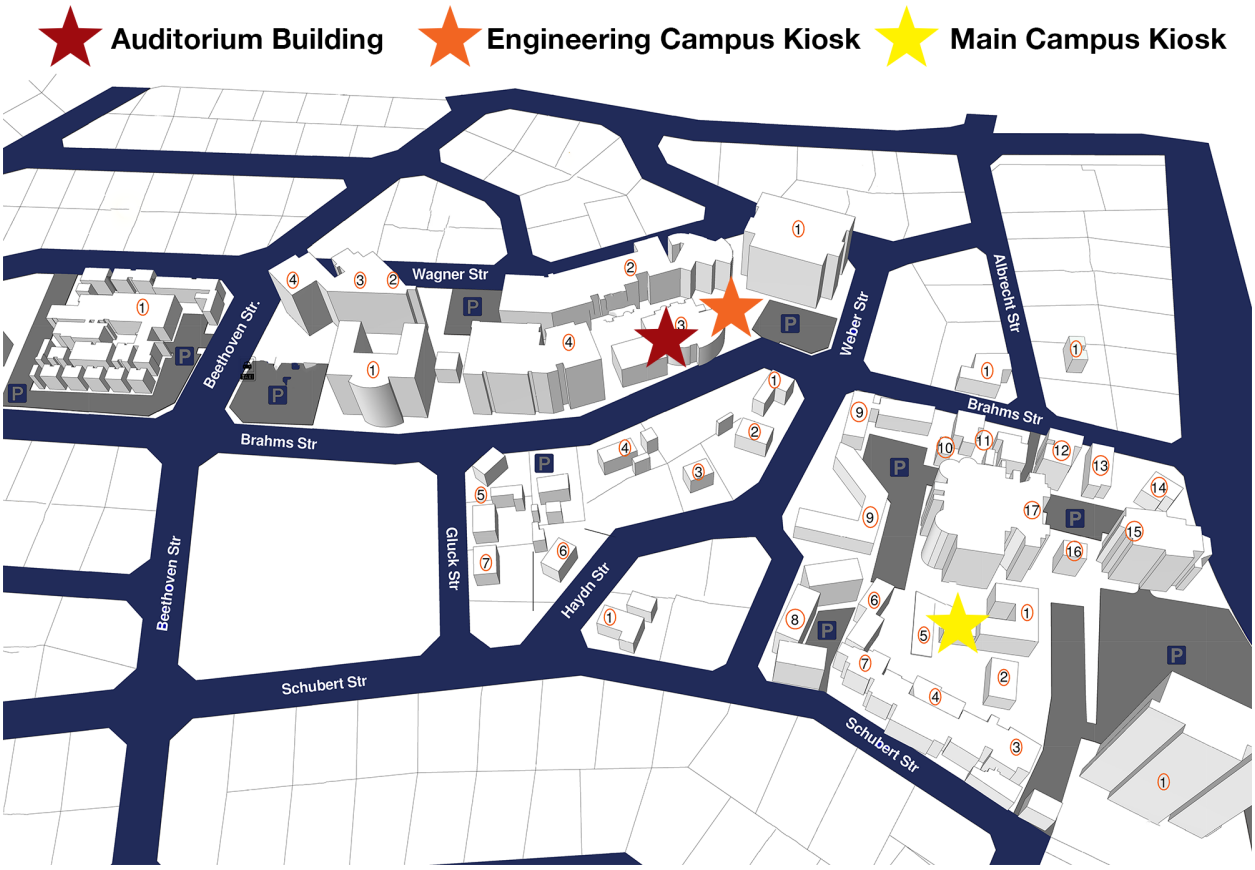

Figure 4-1: NUST Campus Map Highlighting Locations with Significant Student Traffic (NUST Campus Map., n.d)

4.1.3 Informal Meetings with Student Volunteers

Using the methods detailed in Section 3.1.2, the TLU helped recruit nine student volunteers for the pilot study. Seven students accepted the nomination from their departments and the team recruited two more students through snowball sampling. Based on availability, the team set up casual introductory meetings with the student volunteers to introduce the pilot group to the project. Four of the student volunteers were available. One student met with the team at the TLU office on March 22 and three on March 23, 2017. While not all volunteers were able to attend, these meetings helped to initiate friendly relations with some of the volunteers prior to beginning the official pilot group meetings. The team also gauged their interest in the project and gathered their opinions on different potential promotional methods. The initial promotional plan included a seminar to inform students about the MOOC platform, but the student volunteers expressed strong preference for an outdoor activation. One of the student volunteers informed the

team about an unofficial NUST Facebook group and suggested that it may be an effective promotional channel for reaching students. The team did not take notes during these casual introductory meetings, in order to appear more approachable to students.

These meetings allowed the team to build personal connections with four of the student volunteers and better understand the NUST campus atmosphere from students' perspectives. Moreover, the team gained more insight into viable promotional methods at NUST. During the first official pilot group meeting, the team gave another introduction to the project for students that could not attend these initial introductory meetings.

4.1.4 Interview with Brand Champion

The team met with the Brand Champion of the NUST BAM Committee, Ms. Cherley Du Plessis, on March 28, 2017 to learn about methods and protocols for promotion at NUST. Du Plessis explained the guidelines for using the NUST brand in promotional materials. The NUST brand is only a year old, and as a result, the university wants to maintain a strong and consistent image across all published materials, in order to enhance recognition of the NUST brand. The Brand Champion approves all communications using the brand. Because the team was representing the TLU, an official NUST department, it was crucial that the developed promotional materials were consistent with the NUST branding guidelines. The team collaborated with Ms. Du Plessis to develop posters, which were based on official NUST templates. She provided the team with the NUST Corporate Identity Manual (Abbreviated version shown in Appendix C.3), which provided information on the official university fonts and colors as well as the significance of the NUST branding elements.

Finally, Du Plessis informed the team of the university sustainability initiative. Section 2.3.4 discusses this initiative in detail. As a result, the project team took the NUST sustainability pledge (Appendix B.1) and focused its efforts on a primarily digital promotional campaign, minimizing the use of printed materials. Appendix B.2.3 contains the detailed notes from this interview. The information from these interviews and meetings helped the team determine the final list of potential promotional methods, detailed in Section 4.2.

4.2 Develop Promotional Materials

This section details the process by which the team selected and developed a final set of promotional materials to form the promotional strategy. These materials include posters, videos, campus radio announcements, lecture pitches and an activation. This section focuses solely on the process of developing the promotional materials. Later sections discuss the process of evaluating materials based on pilot group feedback, releasing them through different promotional channels, and assessing their effectiveness using *Bitly* short link tracking and other analytics.

4.2.1 Choosing Promotional Materials

The leftmost column of the preliminary decision matrix (Table 3-1 in Section 3.2.1) contains the initial compilation of potential promotional methods based on background research. The team then added to this list using information gathered from the initial interviews with NUST organizations and student volunteers to create a final list of potential promotional methods, shown in the leftmost column of Table 4-1. The matrix also contains a summary of the information gathered about each method, including the required resources and effort needed to implement each method (see Section 3.2.1).

Based on all the available information, the team gauged the viability of each potential promotional method. Although not all interviewees had the same opinions about the promotional methods, the project took all feedback into consideration and decided which methods were worth pursuing based on the estimated effort and required resources detailed in Table 4-1. The rightmost column of the final decision matrix (Table 4-1) indicates whether the project used each promotional method.

The interviews revealed significant drawbacks to five methods the team had originally planned to utilize, and thus helped avoid unnecessary effort. The original plan included extensive use of printed posters and brochures. The meeting with the Brand Champion introduced the NUST sustainability initiative, which discourages extensive use of paper. In order to align with the initiative, the project's emphasis shifted from printed materials to a more extensive electronic promotional plan. When investigating potential electronic promotional channels, the team initially believed that the campus-wide SMS announcement would be an effective method of

reaching a large audience. However, according to the project sponsor, Mr. Nkusi, the service cost around N$12,000 which was not within the TLU's budget.

The plan for developing videos also changed. The student volunteers collectively agreed that shorter videos were optimal for social media promotion. The Brand Champion also suggested limiting promotional videos to duration of 30 to 60 seconds in order to best retain viewers' attention. Therefore, the team decided not to develop the longer promotional video featuring student testimonials. In addition, time constraints eliminated the MOOC platform tutorial production.

The promotional plan for face-to-face methods shifted as well. The plan included a seminar to discuss the MOOC project with students. However, after meeting with student volunteers and observing the campus atmosphere, the team decided that an outdoor activation was a more effective alternative to indoor seminars. According to NUST FM staff, typical activations at NUST include music, informational flyers about the event, and take place in popular locations on campus such as the two kiosks illustrated in Figure 4-1.

Table 4-1: Decision Matrix for Potential Promotional Methods

Method	Required resources	Est. Effort (Scale 1-5) 1=Minimal 5= Maximum	Utilized in promotional strategy?
Printed Posters - Hung by Student Representative Council on campus bulletin boards	1. Graphical design software 2. Approval of NUST Brand Champion 3. Printer 4. Stamp of approval by SRC	3	Yes. But limited as NUST has an initiative to be sustainable. This includes using less printed paper.
Online Posters - Posted on social media platforms	1. Graphical design software 2. Access to social media channels 3. Approval of NUST Brand Champion	2	Yes. Social media has a very large potential audience and makes it simple to gather data.
NUST Website Ad - Banner ad placed on	1. Access to NUST website 2. Design software	2	No. Could not acquire necessary website access.
eLearning Portal Online Advertisement - Short ad on eLearning page	**1.** Access to NUST website **2.** Design software	1	No. The TLU already placed an ad on the MyNUST eLearning homepage, prior to the WPI team's promotion.
Short promotional Videos	1. Camera and microphone 2. Video editing software	4	Yes. It was valuable to use some form of video because it is richer than other forms of digital media. Students recommended short videos, which the team decided were suitable for social media.
Testimonials Video - Longer format, students talking on camera	1. Camera and microphone 2. Video editing software	4	No. Pilot group students and the Brand Ambassador recommended shorter videos, which the team believed would be more suitable for social media and easier to produce.
Email Announcements	1. Access to mailing lists or newsletters	2	Yes. The TLU can send emails to all NUST students. Although interviews indicated not all students read their NUST emails, the low required effort and large potential audience makes it a viable option.
Seminars / Presentations -Adapting the TLU's format for seminars given to lecturers to discuss MOOCs with students	1. Venue (through SRC) 2. Pre-promotion	3	No. Interviews suggested that seminars might not adapt as well to the student audience as the team previously thought. The team decided outdoor activation would be a more suitable replacement.
MOOC Platform Tutorial	1. Screen recording and video editing software 2. Microphone	4	No. This method was low priority, and the team did not have enough time to pursue it.
Lecture Pitches - 5 min during lectures	1. Cooperation of NUST lecturers 2. Student Brand Ambassadors	2	Yes. This was a way to speak with a large amount of students face-to-face.
Online Radio Broadcast	1. Cooperation of NUST FM staff	2	Yes. Radio broadcasts were simple to record and reach a large potential audience.
SMS Announcements - Through NUST SMS gateway	1. Point of contact for SMS announcements 2. Funding from TLU (around N$12.000)	1	No. The cost was not within the scope of the TLU's budget.
Brochures / Flyers - Handed out to students	1. Design software 2. Printer	3	No. This would require significant printing, which the NUST sustainability initiative discourages.
Activation (Outdoor Demonstration)	1. Location scheduled in advance 2. Entertainment	3	Yes. Activations attract many students in common areas on campus.

Key	Print	Digital	Face-to-Face

The team then developed promotional materials that implemented the promotional methods selected in Section 4.2. Each promotional method includes one or several promotional materials. Figure 4-2 demonstrates the chosen promotional methods and their corresponding promotional materials.

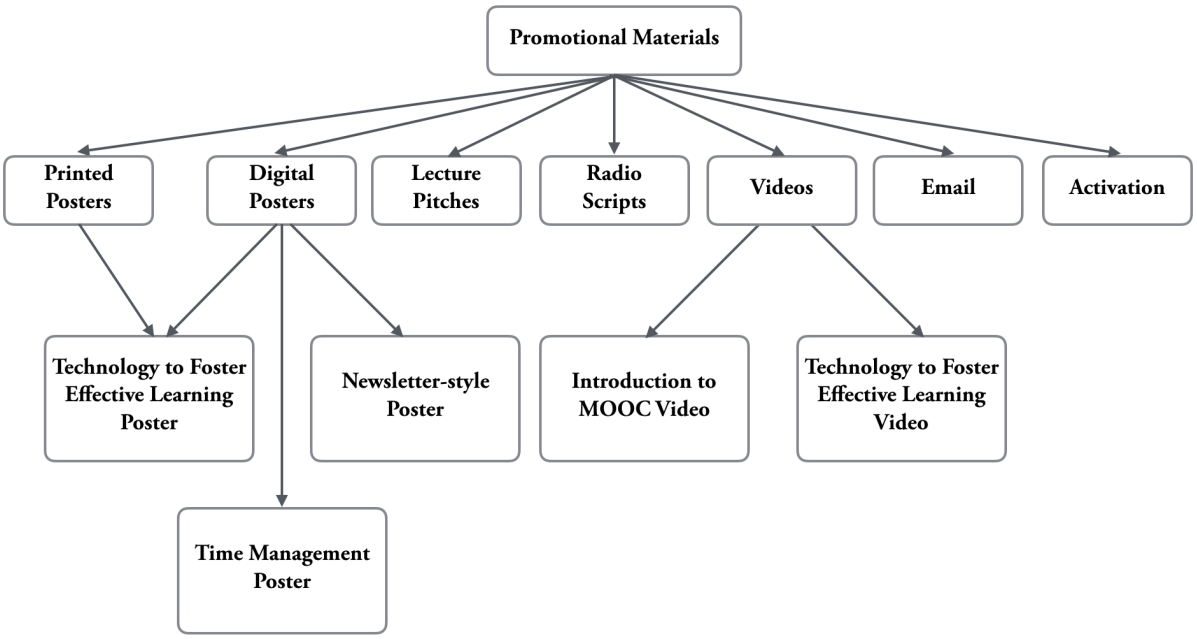

Figure 4 -2: Chosen Promotional Methods and their Corresponding Promotional Materials

4.2.2 Posters

The promotional strategy included three different poster designs, which employed a variety of styles. One poster promoted the MOOC project as a whole, while two others promoted the specific MOOC courses. The team used Adobe Photoshop to create images illustrating the MOOCs and then designed the final layouts for the posters in Adobe InDesign, based on official NUST branding templates.

4.2.2.1 Newsletter-Style Poster

The Brand Champion worked with the team to design a newsletter-style poster as seen in Figure 4-3. This poster describes the background of the MOOC project and WPI's involvement. It defines the term MOOC and provides information about the first two MOOCs at NUST. At the

bottom, it contains a signup link, as well as an advertisement for the upcoming activation. The poster included a QR code, which also linked to the registration page.

The team based the poster design on a template for a NUST newsletter. A team member created an image in Adobe Photoshop using a screenshot of the MOOC platform and a free stock image from Pixabay.com. This image is royalty free and the license does not require author attribution. The Brand Champion reviewed the final poster and approved it for publication. The promotional materials typically received publication approval from the Brand Champion three to five days after the team sent them.

4.2.2.2 *Technology to Foster Effective Learning* Poster

The team also collaborated with the Brand Champion to create a second poster promoting the *Technology to Foster Effective Learning* MOOC, illustrated in Figure 4-4. This poster has a simple design and contains a large image with minimal text. This was an intentionally contrasting style to the more text-rich newsletter-style poster. The team based the poster on a NUST template and used the same image from the newsletter-style poster.

4.2.2.3 *Time Management* Poster

Finally, the team created a third poster on the *Time Management* MOOC (Figure 4-5). This MOOC followed the same template and approval process as the previous two posters. A team member designed the cover image to be more entertaining and humorous than the previous posters, in an attempt to catch students' attention.

Figure 4-3: Newsletter-style Poster

Figure 4-4: Technology to Foster Effective Learning Poster

Figure 4-5: Time Management Poster

4.2.3 Radio Advertisements

The team collaborated with NUST FM to create four radio advertisements, or jingles, which advertised the MOOC platform and called for listeners to sign up for each MOOC. Two advertisements promoted the *Technology to Foster Effective Learning* MOOC and one promoted the *Time Management* MOOC, while the fourth promoted the MOOC platform as a whole.

Each jingle ended with a call-to-action, either to visit the NUST FM Facebook page for more information, or to visit a registration link directly. The team initially intended to have NUST FM staff read all the advertisement scripts, but after discussion with NUST FM and student volunteers, the team learned that foreign accents may attract students' attention. Two male members of the project team read one jingle script each, while two female members of the NUST FM team read the other two, in order to incorporate a variety of voices and accents.

Below are the four radio scripts:

"Having trouble with the MyNUST eLearning platform?
A new short online course covers topics such as updating your eLearning profile, resetting your password, submitting assignments, how to build a MyNUST portfolio, and much more.
All you have to do is sign up @ bit.ly/nustradio to make your eLearning experience better than ever. Check out NUST FM on Facebook for more details."

"Are you always late or have difficulties finishing work on time? A new online course on Time Management is coming soon to help you learn skills to effectively manage your time and succeed in your academic and work life. Follow NUST FM on Facebook for more details."

"Many students have difficulties using the MyNUST eLearning platform and are looking for better support. Suffer no more because a new online course will solve all your eLearning problems. Sign up today @ bit.ly/nustradio make your eLearning experience better than it has ever been. That's b-i-t-dot-l-y-forward-slash-nust-radio."

"The NUST Teaching and Learning Unit has launched new Massive Open Online Courses to further students' with skills such as eLearning and Time Management. These skills are essential for students' success after graduation. Follow NUST FM on Facebook for more details."

4.2.4 Promotional Videos

The team created two short promotional videos to advertise the MOOCs. The first video introduces the concept of MOOCs and the motivations of the MOOC project as a whole, while the second video promoted the *Technology to Foster Effective Learning* MOOC. These videos employed two different styles in order to test the effectiveness of different video styles on the success of the promotion.

One team member, Mr. Feehrer created animations and motion graphics for the videos in Adobe After Effects, using a variety of free templates as well as custom graphics. He then assembled the final video clips in Adobe Premiere Pro and added copyright-free background music. The team supplied its own equipment, including a video camera and portable voice recorder. Figure 4-6 shows Mr. Feehrer filming a shot for the *Technology to Foster Effective Learning* video with two student volunteers.

Figure 4-6: Mr. Feehrer in Video Production with Student Volunteers

4.2.4.1 Introduction to MOOCs at NUST Video

The first video is 60 seconds long and employs a completely animated video style. It uses a mixture of motion graphics and voice-overs to introduce the concept of MOOCs and explain the motivations for using MOOCs at NUST. The video also advertises the first two MOOCs, as

seen in Figure 4-7, and ends with a *Bitly* registration link for the platform. The video starts and ends with the official NUST logo and a sub header for the TLU.

As a result, the team decided to have one of its members narrate the video. The animated style of this video meant that it did not require external actors or significant production time, making it an ideal first video to release due to the impending release dates. The background music consists of a copyright-free, upbeat guitar track. Appendix C.2.1 contains an annotated video script for the Introduction to MOOCs at NUST promotional video. Following is the link to the final video: https://www.youtube.com/watch?v=QOMZeRDbP2g. The video file, *MOOC_Intro.mp4*, also accompanies this report's e-submission.

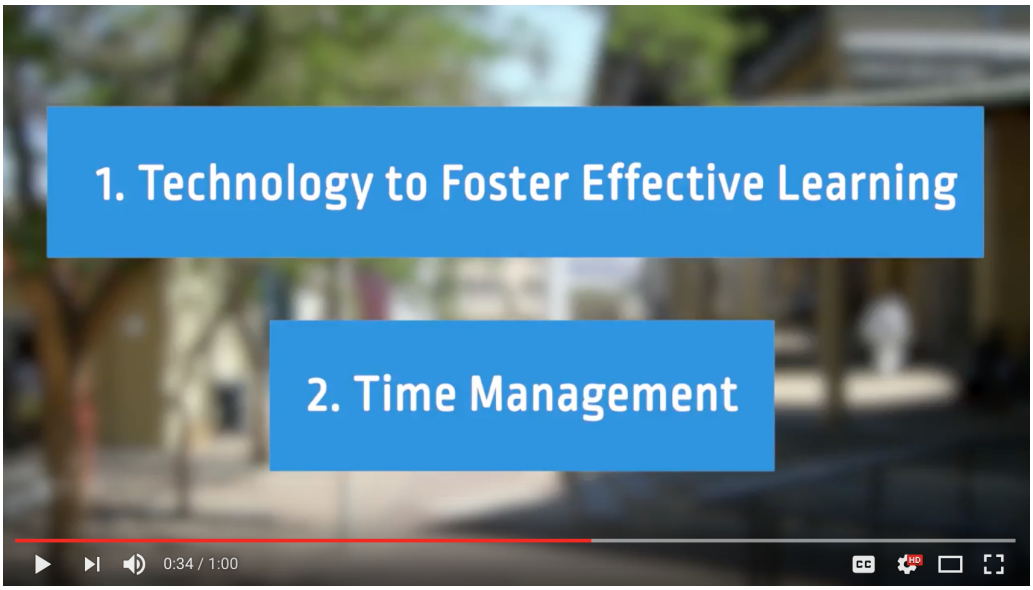

Figure 4-7: Introduction to MOOCs Video Screenshot

4.2.4.2 *Technology to Foster Effective Learning* Video

The second video is 47 seconds long and consists of NUST students speaking on camera to promote the *Technology to Foster Effective Learning* MOOC, as seen in Figure 4-8. It begins with a "video-wall" montage of nine students expressing frustration and confusion with the MyNUST eLearning platform. The video then transitions to two students presenting a brief introduction to the course. It ends with a signup link, the official NUST logo, and a sub header for the TLU.

The team intended to connect with students at NUST by featuring footage of their peers. Eleven students volunteered to act in the video. Some of these students were pilot group participants, while others met the team through contacts at NUST FM and the SRC. All

participants gave written consent using a WPI Institutional Review Board video release form (Appendix C.1). NUST did not have its own defined photo and video release protocol. The team filmed the video at a variety of indoor and outdoor locations on campus. While producing the videos with the student volunteers, the team altered the word choice in the scripts based on students' suggestions, to culturally contextualize the language. For example, some of the volunteers expressed that "WebMail" was a much more common term for "email," and that most students simply use the term "eLearning" and do not recognize the term "MyNUST" as easily. Following is the link to the full video: https://www.youtube.com/watch?v=NO_Ayonp1tc. The video file, *MOOC_Tech.mp4*, also accompanies this report's e-submission.

Figure 4-8: Technology to Foster Effective Learning Video Screenshot

Appendix C.2.2 contains the video script for the *Technology to Foster Effective Learning* promotional video.

4.2.5 Activation

With the assistance of SBA and NUST FM, the team planned and successfully held an activation at NUST main campus on Wednesday, April 19, 2017 from 11:30am to 2:00pm, the designated lunch break at NUST. During this break, the majority of students socialize outside in common areas, especially near the food kiosks. The activation took place at the Main Campus Kiosk (marked in Figure 4-1) on a Wednesday, when the students' designated lunch break is

longer due to a weekly lecturer meeting. During the activation, team members spoke with students about the MOOCs (Figure 4-9).

Figure 4-9: Mr. Nkimbeng Interacting with Student During Activation

The equipment used during the activation included a table, laptops, speakers, and a whiteboard. The team provided tables and laptops where students could register for the MOOC platform. Music attracted students and drew attention to the registration table. The team also brought a large piece of paper where students could write their ideas for possible future MOOCs at NUST (Figure 4-10). The collected ideas are located in Appendix C.4. These ideas did not directly relate to the project, but were valuable information for the TLU. There were approximately 100 students in the vicinity of the activation. After speaking with 44 students, the team achieved 29 new MOOC registrations from the event.

Figure 4-10: Whiteboard for MOOC Ideas

4.2.6 Lecture Pitches

Originally, the team planned to conduct lecture pitches in cooperation with the SBA. However, the SBA members' contracts had expired and thus they were unable to hold lecture pitches at the time. As a result, the team members decided to organize the pitches themselves. The TLU assisted the project team by identifying lecturers willing to participate. Ms. Lu and Mr. Nkimbeng met briefly with the lecturers during the TLU's lecturer training session to introduce the project and schedule a time for lecture pitches.

The team then visited six classrooms ranging in size from 13 to 70 students. Figure 4-11 shows Mr. Nkimbeng and Mr. Feehrer conducting a lecture pitch in a computer laboratory. The lecture pitches followed this basic structure:

1. Introduce the team
2. Explain the project and the goal of MOOCs at NUST
3. Introduce the two available courses
4. Write signup link and team contact information on the whiteboard
5. Brief question and answer period.

Figure 4-11: Mr. Feehrer and Mr. Nkimbeng Conducting a Lecture Pitch

4.2.7 Email Announcements

The final method used in the promotional strategy was an email announcement about the MOOCs sent to 10,560 NUST student email addresses. Even though the SRC representative mentioned that not all NUST students use their university email address, the team decided to utilize this method because writing a brief email was not a significant time investment and could potentially reach thousands of students. The email was also an appealing option because it did not require approval from any NUST departments outside of the TLU. The team wrote the email (Appendix C.5) with input from Mr. Maurice Nkusi. It provided a brief introduction to the MOOC platform and the two available MOOCs. In addition to a signup link, the email contained a link to the Introduction to MOOCs video, to help explain the project to students in a more engaging format than text alone.

4.3 Pilot Group Feedback

The team conducted two rounds of promotional material evaluation with the pilot group students. The first round consisted of an in-person meeting, while the second consisted of feedback through an online questionnaire, which the team sent out to the students during the NUST recess from April 10 to April 17, 2017.

4.3.1 First Pilot Group Evaluation

Nine student volunteers attended the first pilot group meeting on March 30th, 2017. The team demonstrated the *Technology to Foster Effective Learning* course on the MOOC platform to familiarize the student volunteers with the MOOC. Next, the team presented three promotional materials: the poster for *Technology to Foster Effective Learning* (designed for print and digital distribution), the newsletter-style poster (designed for digital distribution), and four radio scripts. Each student volunteer filled out an anonymous scorecard for each promotional material and then participated in an open discussion about shortcomings and possible improvements. Finally, the team gathered preliminary suggestions from the pilot group for developing promotional videos, since the video scripts were not yet ready for evaluation.

The team calculated the average score from all nine scorecards based on the scores each student gave for the five attributes (described in Section 3.3.1). The resulting average scores translated into a readiness indicator using the process explained in Section 3.3.3.

4.3.1.1 *Technology to Foster Effective Learning* Poster Results

The set of nine scorecards for the *Technology to Foster Effective Learning* poster resulted in a readiness indicator of 4.1, which was above the passing threshold of 3.5 (Table 4-2). In addition to the scores, the team received one comment expressing that the poster did not provide enough information.

Table 4-2: Technology to Foster Effective Learning Poster Averaged Score

Attribute	**Average Score**	**Weighted Average**
Informativeness	3.9	1.0
Entertainment	3.3	0.6
Non-Irritation	4.7	0.6
Benefits	4.4	1.2
Credibility	4.3	0.7
Total (Readiness Indicator R)		**4.1**
All Comments:	"Not enough information"	
n=9		

The pilot group students then gave feedback during the open discussion. Below is a list of their comments:

- The image is captivating and the poster looks professional.
- QR codes are not common at NUST campus so it is not necessary on the poster.
- The QR code may lend credibility to the poster.
- The poster lacks informativeness.

The team took each one of the above comments into consideration. After review, the team decided to keep the QR codes on the posters because the codes gave the posters more credibility despite the claim that QR codes were not common on campus. In addition, after discussion with the pilot group members, the team decided to release the Newsletter-style poster before the *Technology to Foster Effective Learning* poster so that students could understand the project as a whole before learning about each particular MOOC.

4.3.1.2 Newsletter-style Poster Results

The scorecards for newsletter-style poster resulted in a readiness indicator of 4.2, which also exceeded the 3.5 threshold (Table 4-3). This poster did not receive any comments.

Table 4- 3: Newsletter-style Poster Averaged Score

Attribute	**Average Score**	**Weighted Average**
Informativeness	4.4	1.2
Entertainment	2.8	0.5
Non-Irritation	4.6	0.6
Benefits	4.4	1.2
Credibility	4.3	0.7
Total (Readiness Indicator R)		**4.2**
All Comments:	(none)	
n = 9		

The pilot group then gave comments about the poster during the open discussion:

- This poster contains a lot of text and some students might not read it.
- This poster is very informative and will complement the *Technology to Foster Effective Learning* poster that contains less text.
- The picture on the poster is attention grabbing.
- Using the same picture makes the two posters appear more consistent and may help students recognize the connection between them.

The feedback from the pilot group supported the team's initial plan to use the same image for both the *Technology to Foster Effective Learning* poster and the Newsletter-style poster.

Although one pilot group member felt that some students might not read the full Newsletter-style poster because of the amount of text, the team believed that the *Technology to Foster Effective Learning* poster would complement this by acting as a shorter format, yet more entertaining poster. The Newsletter-style poster scored lower than the *Technology to Foster Effective Learning* poster on the entertainment attribute, but higher on informativeness. This complementary in scores of different criteria also supported this strategy. In summary, the pilot

group feedback resulted in no major changes to either poster, but helped confirm the direction of the project.

4.3.1.3 Radio Script Results

The radio scripts developed by NUST FM received a passing readiness indicator of 3.8 (Table 4-4). The scripts also received one comment that they did not clarify whether the courses were online or in-person.

Table 4-4: Radio Scripts Averaged Score

Attribute	**Average Score**	**Weighted Average**
Informativeness	3.7	1.0
Entertainment	3.1	0.5
Non-Irritation	4.3	0.5
Benefits	4.0	1.1
Credibility	4.1	0.7
Total (Readiness Indicator, R)		**3.8**
All Comments:	"The scripts don't make it clear whether the courses are online or in-person."	
n = 9		

When asked, none of the pilot group members indicated that they listened to NUST FM but they still made pertinent comments during the open discussion period:

- The radio scripts would work well for the audience of NUST FM.
- Have a lively and entertaining voice read the scripts in order to capture listeners' attention.

The pilot group's comments helped validate the team's decision to use radio announcements as a promotional method. To address the scorecard comment shown in Table 4-4, the team slightly altered the radio scripts in order to emphasize that the courses were online

rather than in-person. Overall, the pilot group feedback caused no major changes to the radio scripts.

4.3.1.4 Video Scripts

The last step in the pilot group meeting was to hold an open discussion about the video scripts to gather input on the development of the videos. One participant recommended a short form, animated video and to create different types of videos to complement each other -- including a video with one person narrating throughout to create an official impression. Another participant suggested the team contact the drama club members and gauge their interest in taking part in the videos. These suggestions served as inspiration for the team when developing the promotional videos. Based on the first suggestion, the team decided to produce two different videos in different styles to complement each other, one in animated form, and another with NUST students speaking on camera.

4.3.2 Second Pilot Group Evaluation (Online)

The pilot group students were on Easter recess from April 10 to April 17 and as a result, were unable to meet in person for the second pilot group evaluation. The team thus sent out an online evaluation form with three promotional materials: The Introduction to MOOCs video, *Technology to Foster Effective Learning* video and a "dummy" poster to the eight pilot group members through emails and text messages on April 12, 2017 and followed up with the pilot group members every two days. This form was identical to the paper evaluation used to evaluate the materials in the first pilot group meeting. After a week, the team received four responses on the online evaluation form and calculated the results. Appendix A.7 contains the evaluation form used to assess each promotional material.

4.3.2.1 Introduction to MOOCs Video Results

The Introduction to MOOCs Video employed a fully animated style and explained the MOOC project as a whole. This video received a readiness indicator of 4.1 (Table 4-5).

Table 4-5: Introduction to MOOCs Video Averaged Score

Attribute	**Average Score**	**Weighted Average**
Informativeness	4.3	1.1
Entertainment	3.0	0.5
Non-Irritation	5.0	0.6
Benefits	4.0	1.1
Credibility	4.3	0.7
Total (Readiness Indicator R)		**4.1**
All Comments:	(none)	
n = 4		

With a readiness indicator of 4.1, this material passed the 3.5 threshold for success. This video scored lower on entertainment than the team had anticipated. It also achieved a perfect score for non-irritation, which was surprising since the team expected that the animated style would appear irritating to some viewers. Due to the very small sample sizes (nine for the first evaluation round and three for the second round), it is impossible to draw overall conclusions about the NUST campus as a whole, but this round of review helped verify that the design of the videos was appealing to the students who responded. The pilot group students did not leave any additional comments on this video.

4.3.2.2 *Technology to Foster Effective Learning* Video Results

The *Technology to Foster Effective Learning* video differed from the Introduction to MOOCs video as it featured eleven NUST students speaking on camera. The results from pilot group translated into a readiness indicator of 4.3 (Table 4-6). One student expressed extreme positivity about the video in the comments section.

Table 4-6: Technology to Foster Effective Learning Video Score

Attribute	**Average Score**	**Weighted Average**
Informativeness	4.3	1.1
Entertainment	4.3	0.7
Non-Irritation	3.0	0.4
Benefits	4.8	1.3
Credibility	4.8	0.8
Total (Readiness Indicator) R		**4.3**
All Comments:	"ohhhhhhh snaaaaap!!!!!!!! Dude that's AWESOME!!!!!!!!"	
n = 4		

This video scored higher on entertainment and credibility but lower on non-irritation as compared to the Introduction to MOOCs video. In general, the videos scored relatively high, and the *Technology to Foster Effective Learning* video scored the highest among all the promotional materials. This result may have been because this video featured NUST students and took place on the NUST campus, making the video familiar and interesting to NUST students.

4.3.2.3 "Dummy" Poster Results

The team also created a "dummy" poster (Figure 4-12) for the second pilot group evaluation. This poster intentionally included flaws in order to validate that the pilot group evaluation method was capable of stopping poorly designed promotional materials from release.

It also featured very little information, a poor-quality graphic, an incoherent layout, a very long registration link, and lacked NUST insignia or colors. Table 4-7 contains the average score from the "dummy" poster pilot group evaluation.

Table 4-7: "Dummy" Poster Averaged Score

Attribute	**Average Score**	**Weighted Average**
Informativeness	2.3	0.6
Entertainment	2.5	0.4
Non-Irritation	3.3	0.4
Benefits	2.8	0.7
Credibility	3.2	0.6
Total (Readiness Indicator R)		**2.7**
All Comments:	(none)	
n = 4		

The "dummy" poster received a readiness indicator of 2.7, which was below the passing threshold of 3.5. While it was difficult to assign a concrete threshold for passing, the fact that the poster did not pass the chosen threshold of 3.5 indicated that the pilot group evaluation method was in fact capable of stopping poorly designed materials from release.

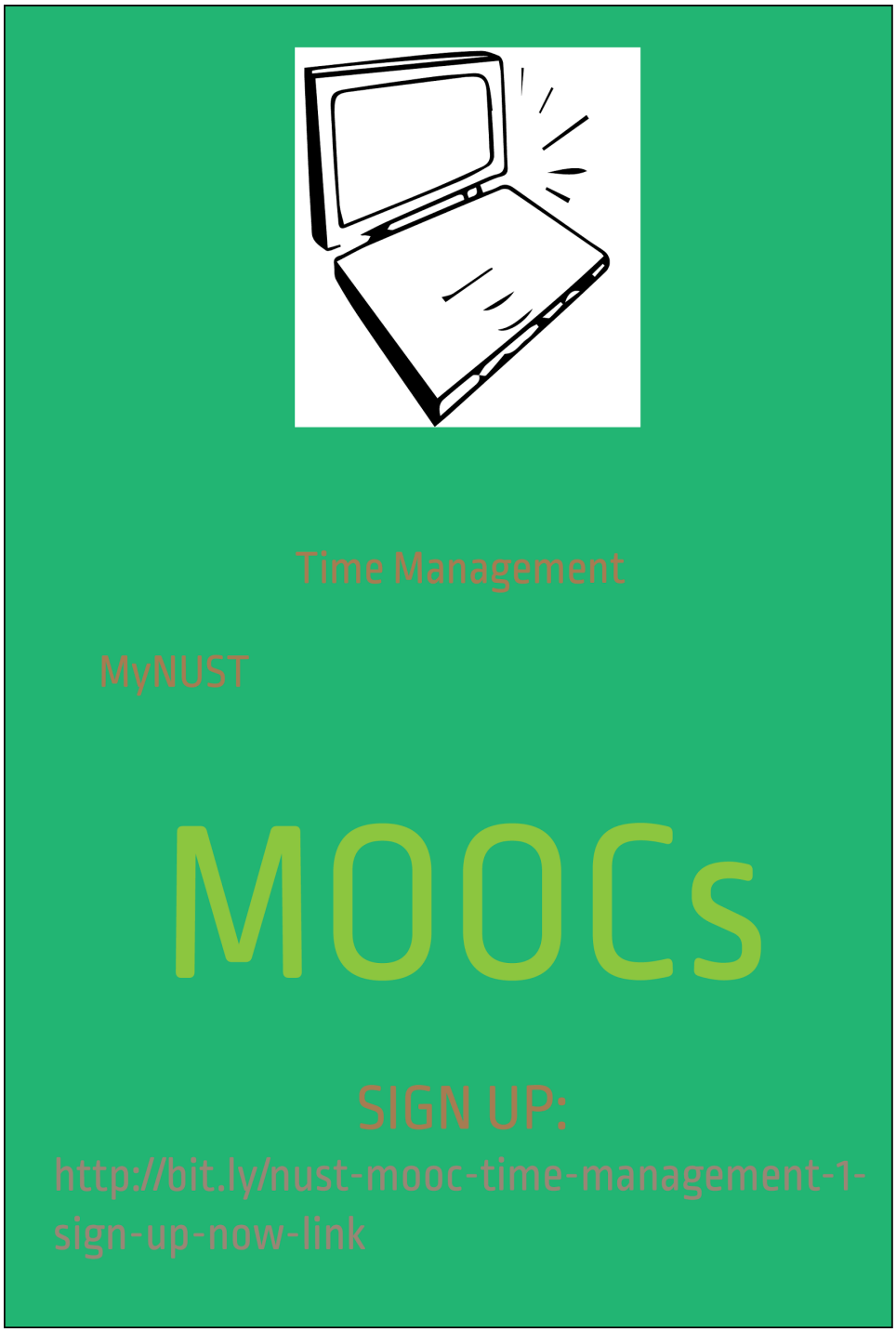

Figure 4-12: "Dummy" Poster

4.3.3 Unreviewed materials

Due to the short timeframe of the project, not all promotional materials underwent pilot group review. The team developed the email and *Time Management* poster as well as the activation and lecture pitch plans towards the end of the project, after the second round of pilot group review. In order to complete the proposed promotional strategy before the project end date, the team had to release these materials immediately after development. If time allowed, the materials would have benefited from pilot group feedback, however, it was difficult to coordinate another meeting at the end of the project. Releasing the materials was a higher priority task.

4.4 Release of Promotional Materials

In the next phase of the project, the team released promotional materials. With the exception of the intentionally flawed "dummy" poster, all the reviewed promotional materials passed the pilot group evaluation, indicating that they were ready for release. Based on background research on promoting product launches, the team learned that promotion across a variety of promotional channels is critical to create repeated interactions, or touch points, with potential customers and move them down the marketing funnel (Willits, 2016). Consequently, the team used a multi-channel marketing approach whenever possible. The promotional strategy focused on social media and face-to-face promotion, with a smaller emphasis on printed materials.

The team assigned each released promotional material a unique *Bitly* short link leading to the registration page. Each short link tracked the number of times someone either clicked the link, or typed it into the URL bar of their browser. All the promotional materials utilized *Bitly* short links of the form: bit.ly/nust-moocX, where a unique identifying number replaced X. The two exceptions were the radio jingle and lecture pitch short links (bit.ly/nustradio and bit.ly/mooc-course). The team designed these two links differently to enable students to easily type the links into their browser after hearing them on the radio or seeing them on a whiteboard. The intention was to keep the links separate for each promotional material and promotional channel used. However, the short links didn't always work as expected. It was difficult to

communicate the intention of using different links and the importance of keeping them separated to the NUST staff members that helped post the materials on Facebook.

Table 4-8 contains the promotional materials, the release channel(s), their corresponding short links, as well as the respective release dates. Figure 4-13 illustrates these release dates in a calendar format.

Figure 4-13: Promotional Materials Release Date Calendar

Table 4- 8: Promotional Material Release Channels and Dates

Promotional Material	Promotional Channel	short link	Release Date
Technology to Foster Effective Learning Poster	NUST official Facebook page	bit.ly/nust-mooc1	April 5, 2017
	NUST unofficial Facebook group	bit.ly/nust-mooc3	April 6, 2017
	Printed and hung on campus bulletin boards	bit.ly/nust-mooc3	April 7, 2017
	SBA Facebook page	bit.ly/nust-mooc7	April 19, 2017
Newsletter-style Poster	NUST official Facebook page	bit.ly/nust-mooc2	April 7, 2017
	NUST unofficial Facebook group	bit.ly/nust-mooc4	April 11, 2017
	SBA Facebook page	bit.ly/nust-mooc2	April 13, 2017
	NUST FM Facebook Page	bit.ly/nust-mooc8	April 21, 2017
Time Management Poster	NUST official Facebook Page	bit.ly/nust-mooc12	April 25, 2017
	SBA Facebook Page	bit.ly/nust-mooc12	April 25, 2017
Radio Advertisements	Aired on NUST FM	bit.ly/nustradio	April 13, 2017
Video 1 - Introduction to MOOCs	NUST official Facebook page & website	bit.ly/nust-mooc5	April 21, 2017
	TLU Facebook page (Shared in NUST unofficial Facebook group)		April 20, 2017
Video 2 - Technology to Foster Effective Learning	NUST official Facebook page	bit.ly/nust-mooc6	April 26, 2017
	TLU Facebook page (Shared in NUST unofficial Facebook group)		April 24, 2017
Outdoor Activation	N/A	N/A	April 19, 2017
Lecture Pitches	N/A	bit.ly/mooc-course	April 24 and 26, 2017
Email	Email	bit.ly/nust-mooc9	April 25, 2017

4.4.1 Single-Channel Releases

While the digital posters and videos had several digital promotional channels through which the team could release them, the printed poster, radio advertisements, activation, and lecture pitches each only had one possible channel of release:

- The SRC hung five printed copies of the *Technology to Foster Effective Learning* poster on bulletin boards around campus. The strategy was to limit the use of printed posters in order to align with the NUST sustainability initiative.
- NUST FM began playing one of the four jingles on rotation every three hours during normal broadcast hours, beginning on April 13, 2017.
- The team held an activation on the NUST main campus on April 19, 2017.
- The team conducted six lecture pitches between April 24 and 26, 2017.

4.4.2 Multi-Channel Promotional Releases

The team heavily utilized different digital promotional channels for the digital posters and videos. Because of the popularity of Facebook at NUST and recommendations from the Brand Champion, the team saw Facebook promotion as an effective method for creating multiple touch points across a large potential audience and released a total of 13 posts on Facebook. Facebook promotional channels consisted of the NUST official Facebook page, student-run NUST unofficial Facebook group, SBA Facebook page, NUST FM Facebook page, and TLU Facebook page.

First, the marketing department posted all three posters on the NUST Official Facebook page and the SBA posted them on their Facebook page. Based on suggestions from the student volunteers, the team also posted the *Technology to Foster Effective Learning* and newsletter-style posters to the NUST unofficial Facebook group. In conjunction with the radio advertisements, NUST FM published the newsletter-style poster to their Facebook page and website, so that listeners could find more information about the MOOCs after hearing a radio advertisement. Due to time constraints and the need to wait for approval from the Brand Champion, the team was not able to publish the *Time Management* poster to as many pages as the other two posters.

With administrator access, the team posted the two videos on the TLU Facebook page and then shared them in the NUST unofficial Facebook group to reach more students. Then the NUST marketing department uploaded the videos on the official NUST Facebook page.

This cooperation between multiple Facebook pages and groups ensured that it was possible for students to see the posts repeatedly rather than just once, and also expanded the potential audience. Facebook posts inherently have a short lifespan on users' newsfeeds before newer content replaces them. With this in mind, the project made an effort to stagger the posts in order to sustain possible touch points over a longer period as illustrated in Figure 4-13. In addition, Figure 4-14 illustrates the promotional channels in a tree structure.

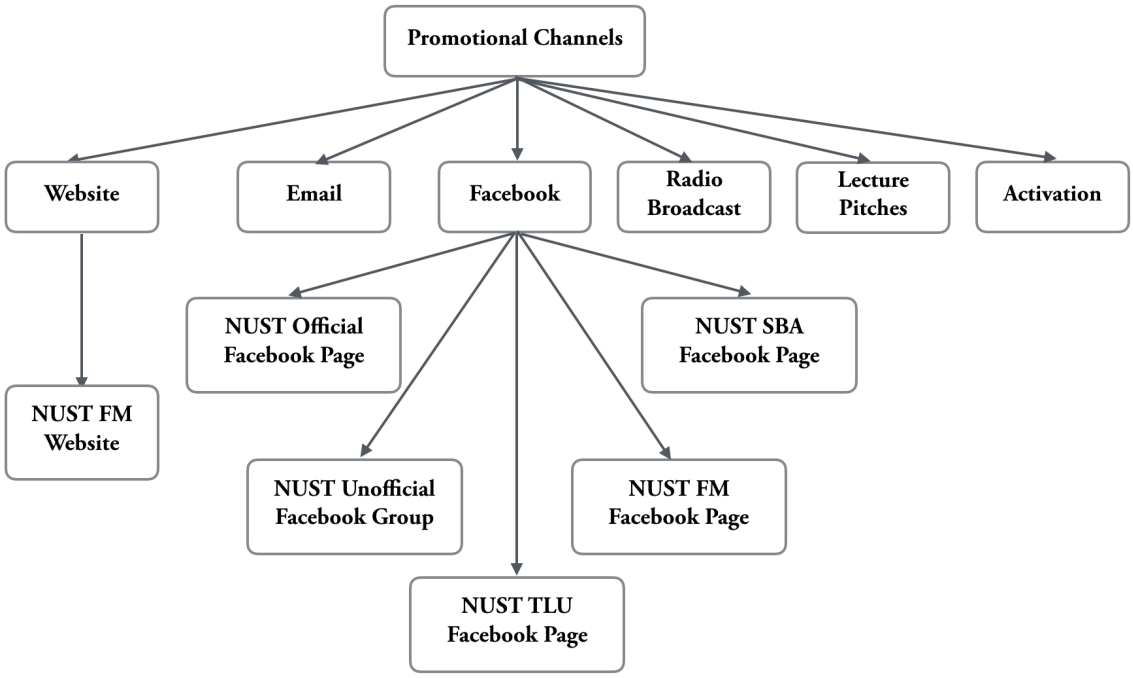

Figure 4-14: Tree Structure of Promotional Channels

4.5 Effectiveness of Promotional Methods

The team analyzed the performance of the promotional strategy according to its various components across all phases of the marketing funnel described in Section 2.4.3. This strategy helped to illustrate the journey that students took to become users on the MOOC platform by

breaking down the process into five distinct phases. To determine the most effective promotional methods, the team analyzed the Awareness, Consideration and Conversion phases of the marketing funnel. Additionally, the team also attempted to collect data on the Loyalty and Advocacy phases. This assessment allowed the project to identify the most effective promotional methods and recommend a refined version of the promotional strategy for future use.

4.5.1 Awareness Phase

In order to analyze the effectiveness of the promotional strategy in the Awareness phase, the project measured students' awareness of MOOCs based on the following metrics:

- Facebook impressions
- Estimated radio impressions
- In-person impressions (Number of students reached in person).

For digital posters and videos, the team counted Facebook impressions, or the number of times a post appeared on unique users' newsfeed (section 3.4.2). To help estimate the number of impressions achieved by the radio advertisements, NUST FM provided the average number of listeners per month. Since the radio advertisements had been running for 15 days at the time of data collection, the team divided the number to roughly approximate the number of radio impressions. Since it was not possible to gain more specific statistics on radio listeners, this estimate could vary widely from the actual number of radio impressions, but it provided an indication of scale. For the lecture pitches, the team counted the number of students spoken to in the six lectures visited. Lastly, the team estimated the number of impressions achieved from the activation by approximating the number of students who were present in the vicinity of the event. It was not possible to track the number of people reached from printed posters and email. However, the team believes the email gained a vast number of impressions based on its performance in the Consideration phase.

Figure 4-15 shows a comparison of the number of impressions achieved by videos, posters, radio advertisements, lecture pitches and activation. Videos and digital posters demonstrated excellent performance, resulting in over 10,000 impressions combined. Radio performed fairly well, resulting in around 2,000 (estimated) impressions. Lecture pitches and activation resulted in significantly less impressions. The drastic difference in magnitude of number of people reached through the various promotional methods could be attributed to the

nature of digital marketing. The digital methods could reach a vast potential audience, in comparison with the inherently limited audience reachable through the two face-to-face methods. In conclusion, videos and digital posters were the most successful promotional methods in the Awareness phase.

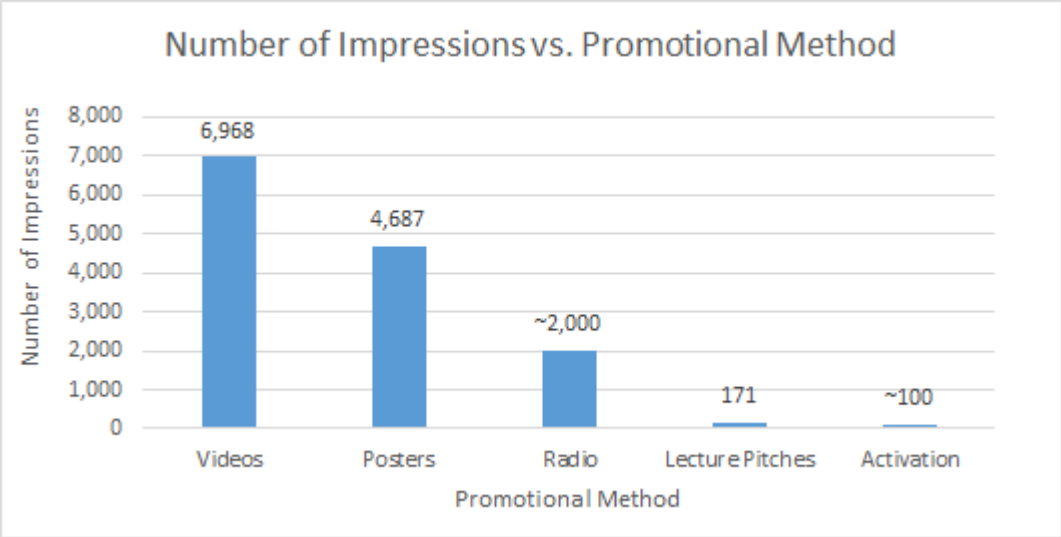

Figure 4-15: Number of Impressions vs. Promotional Methods

4.5.2 Consideration Phase

The team recorded the number of MOOC registration page visits resulting from each promotional method in order to evaluate their individual effectiveness in the Consideration phase of the funnel. For emails, videos, digital and printed posters, lecture pitches, and radio advertisements, the number of registration page visits represents the number of students who clicked or typed in the individual short links of each material. For the activation, consideration represents the number of students the team directly spoke with during the event. During these interactions, the team presented students with the option of registering for the platform through laptops and classified these conversations as "registration page visits" as well.

Figure 4-16 reports the number of registration page visits that resulted from the use of each individual promotional method. As seen in the figure, emails and videos were very effective methods for getting students to visit the MOOC registration page. These two promotional methods totaled over 200 registration page visits, more than the other five methods combined. The digital posters also performed well in this phase. While the activation and lecture pitches did

not result in the same magnitude of page visits as the electronic methods, they still proved to be relatively useful methods in supporting the Consideration phase. Notably, the printed posters and radio advertisements resulted in very few registration page visits, making them by far the least effective methods in the Consideration phase of the funnel. This low performance in the Consideration phase could have resulted from the inconvenience of having to manually type the signup link into a browser in order to visit the registration page. However, the printed poster and the radio advertisements could have increased students' awareness of MOOCs and served as a touch point, making them more likely to later visit the registration page through another method. Because these methods were ineffective in the Consideration phase, it is clear that they were also ineffective in the Conversion phase since these phases were sequential.

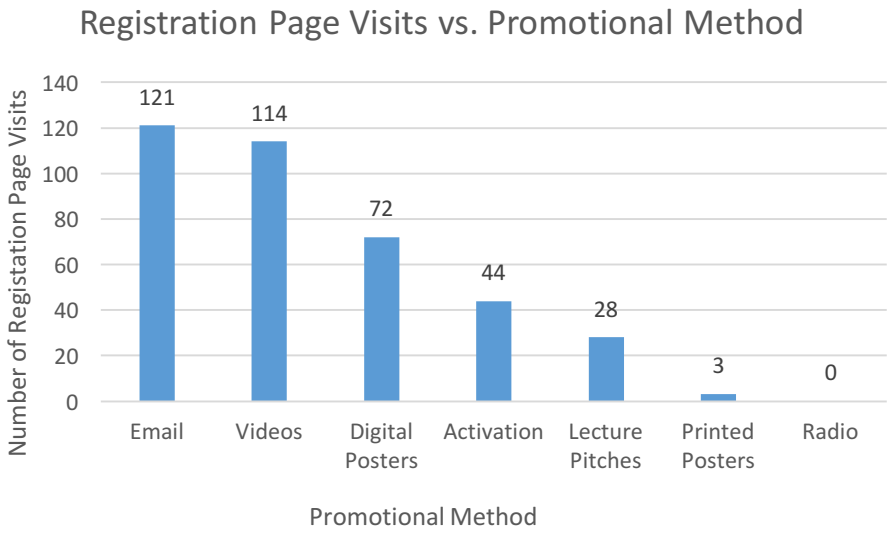

Figure 4-16: Registration Page Visits vs. Promotional Method

4.5.3 Conversion Phase

In order to track the effectiveness of the promotional strategy in the Conversion phase, this investigation analyzed the number of successfully registered users on the MOOC platform daily. Prior to April 5, 2017, when the implementation of the promotional strategy began, there were 134 registered users on the MOOC platform. These initial users registered for the platform after seeing an advertisement the TLU placed on the MyNUST eLearning website on March 21,

2017. Between April 5 and April 29, 2017, over 200 students registered for the MOOC platform. Figure 4-17 illustrates the cumulative registrations on the MOOC platform over this time period.

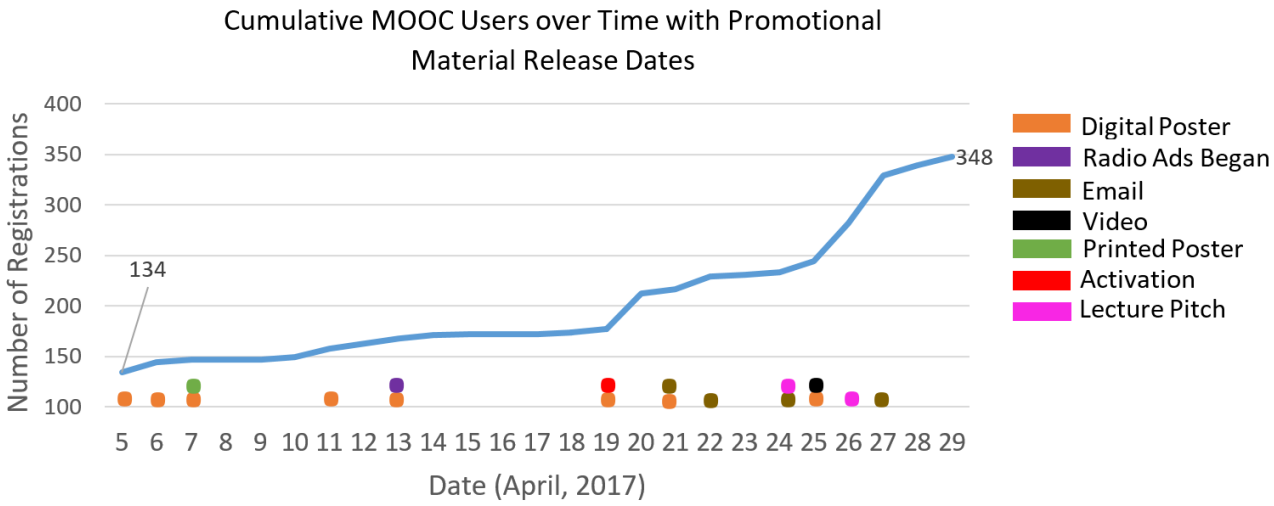

Figure 4-17: Number of Responses to the MOOC Registration Form

While it was difficult to directly correlate the release of each promotion material with the number of registrations on the platform, there were two key points where this was possible. The first point occurred on April 19, 2017, when the activation resulted in 29 students registering for the MOOCs in-person. Here, it was clear that the activation led directly to the conversion of these 29 students, and contributed greatly to the increase in registrations seen in Figure 4-17 between April 19 and April 20, 2017.

Second, from April 24 to April 26 the team accelerated their promotional efforts with the release of promotional videos, lecture pitches and the email sent out to over 10,000 students. The data shows another sharp increase in registrations between April 25 and April 27, 2017. While it is not possible to definitively link the release of these promotional materials with the sudden increase in conversion, the team believes that these releases greatly contributed to this period of growth on the platform.

These two periods of growth provide evidence of a correlation between the release of promotional materials and the growth of users on the platform. Because the intensity of the promotional strategy varied over the course of the project, this correlation was not always as visible as it was during these two periods of increased growth. However, the team believes that

this correlation held true throughout the entirety of the project and concluded with relative certainty that the promotional strategy contributed to the growth of users on the MOOC platform.

4.5.4 Loyalty Phase

Next, the investigation measured Loyalty phase of the funnel by how users interacted with the MOOCs after registering. Loyalty represents continued use of the platform over time, which shows more dedication than simply registering. The performance of the Loyalty phase was harder for the team to control as it depended more on the design of the MOOCs and MOOC platform, and less on the design of the promotional materials. In order to assess the loyalty of users on the MOOC platform, the team utilized user analytics from the MOOC platform to record the percentage of users who began or completed courses on the platform after registration.

As seen in Figure 4-18, only 29.80% of students enrolled in the *Technology to Foster Effective Learning* MOOC had begun the course at the conclusion of the project. For the *Time Management* course, 13.55% of enrolled users had begun the course (Figure 4-19). By the end of the project, no users had completed either MOOC.

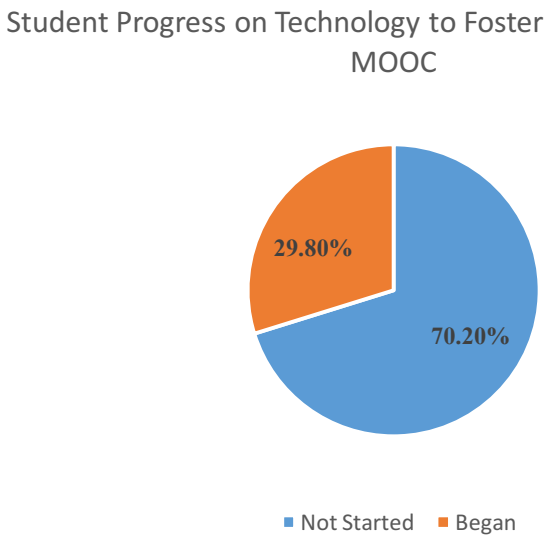

Figure 4-18: Student Progress on Technology to Foster Effective Learning MOOC

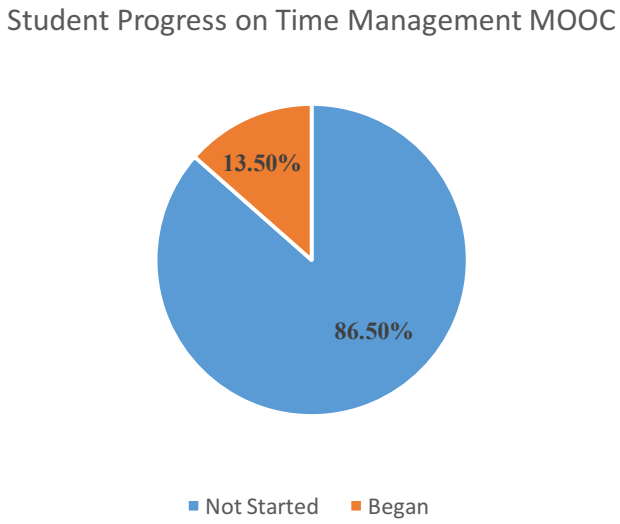

Figure 4-19: Student Progress on Time Management MOOC

As learned in background research, average MOOC completion rates are typically below 10% in the Western world, and can even reach as high as 50% in developing countries (El-Hmoudova, 2014; Garrido et al., 2016). The project team was surprised by the 0% completion rate found on the NUST MOOCs. In particular, the fact that no students had completed the five-hour *Technology to Foster Effective Learning* MOOC in the three weeks since its release was unexpected.

This low completion rate could be a result of students using the MOOCs as reference material as opposed to a course. For example, if a NUST student only wanted instructional guidance on how to change their password, they may only take that designated section of *Technology to Foster Effective Learning* as opposed to the entire five-hour course. It is also possible that students did not find the design or content of the MOOCs engaging or useful enough to complete the courses. Section 5.3 discusses further research and testing that could provide insight into potential improvement of the completion rate.

4.5.5 Advocacy Phase

The Advocacy phase of the funnel consisted of MOOC users who further promoted the courses to other students. This phase was the most difficult to measure. However, the team was able to use two different metrics to gain a perspective on activity in this phase.

1. Number of individuals who indicated on the MOOC registration form (Appendix D) that they found out about the MOOCs through friends
2. Facebook shares

The registration form contained a question asking students to indicate how they found out about the MOOCs. The team developed this question in the beginning of the project before deciding which the promotional methods to use. As a result, the question's options did not reflect the final promotional strategy. Thus, the project could not depend on responses from this question to track the Conversion phase of the funnel. However, the question did ask if students found out about the MOOCs through friends, making this useful data for showing users advocating for the MOOC platform. According to the registration form, 27 students indicated that they heard about the MOOCs from a friend. Facebook shares provided another indication of advocacy. In total, all the promotional materials released on Facebook resulted in 27 shares.

These metrics alone cannot show a comprehensive view of advocacy. There is no guarantee that those who shared information about the MOOC platform were users themselves. However, the fact that there was some activity in this phase is a positive sign, which suggests that some students have been recommending the MOOCs to their friends.

4.6 Results Summary

Through the unstructured interviews with students at NUST and representatives from key departments and organizations, the team gained insights into the promotional atmosphere at NUST as well as protocols for using the NUST brand. The next phase of the project developed promotional materials, including digital and print posters, radio scripts, email, videos, lecture pitches and activation. With the approval of NUST staff and positive feedback from the student pilot group, the team released the promotional materials through multiple promotional channels.

After data tracking and analysis, the team discovered video, digital posters, and email were the three most effective methods for increasing awareness of MOOCs. In the Consideration phase, email and videos performed better than other methods, but digital posters, activation and lecture pitches also resulted in a significant number of students visiting the registration page. The results from Conversion phase suggested that this project contributed to the increase of users on

the MOOC platform. In the Loyalty phase, the rates of enrolled users beginning each MOOC were relatively low. In addition, no users had completed either course, indicating either unexpected user behavior, or a need to improve the MOOC content or platform. Finally, the project demonstrated some evidence of user advocacy through Facebook shares and users indicating that they learned about the MOOC platform through their friends.

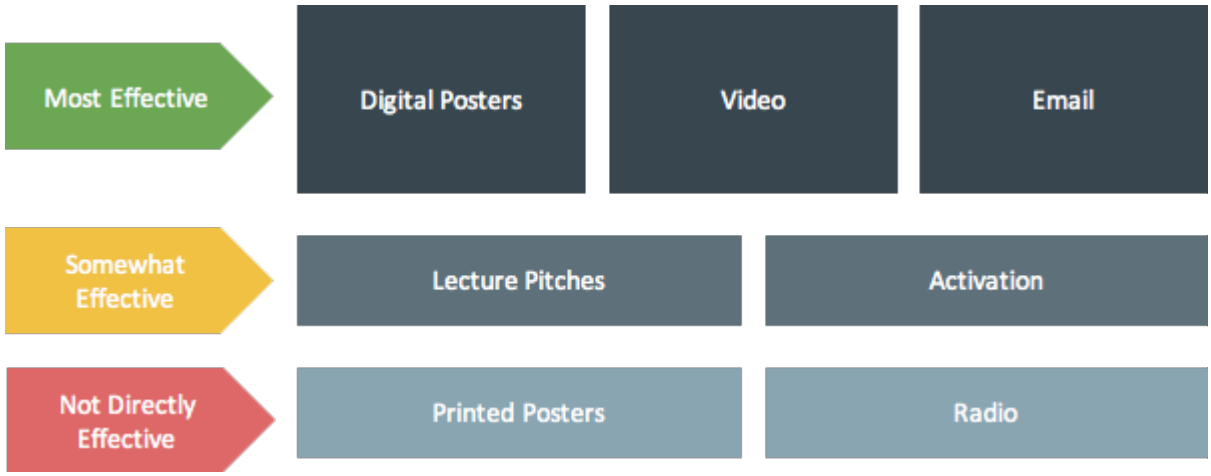

Figure 4-20: Summary of Overall Effectiveness of the Promotional Methods Used

Figure 4-20 represents the project's conclusion about the relative overall effectiveness of the promotional methods used. Digital posters, video and email were very effective across both the Awareness and Consideration phases of the funnel, reaching a large audience and resulting in hundreds of students visiting the registration page. The lecture pitches and activation were not nearly as effective methods for increasing awareness of MOOCs or bringing large numbers of students to the registration page. However, these face-to-face promotion methods were effective in directly converting students into MOOC users. Printed posters and radio advertisements were not effective at directly achieving registration page visits, and by extension could not have been effective in the Conversion phase. However, these methods may have contributed to the Awareness phase by leading students to later visit or register through other methods. The team considered these findings when recommending a refined promotion plan for future MOOCs at NUST. Section 5.1 discusses this recommendation in detail.

5. CONCLUSIONS, RECOMMENDATIONS AND FUTURE WORK

This chapter presents the project's final conclusions and recommendations for future work to be continued by future interns at the TLU. Section 5.1 discusses the outcome of this project in terms of the most and least effective promotional methods, and proposes a refined promotional strategy for future MOOCs. Section 5.2 offers a retrospective view of the methods used in this project, including the pilot group study, incorporation of Agile principles, and marketing tools used. Lastly, Section 5.3 contains the team's ideas for improvements to the MOOC platform and future course development.

5.1 Conclusion and Promotional Strategy Recommendation

The goal of this project was to implement and assess a promotional strategy for MOOCs at NUST. The promotional strategy utilized a variety of methods, some of which exceeded the team's expectations and others which proved to be ineffective. Early on in the project, the team believed that email would be a relatively ineffective promotional method after being told that students do not regularly check their NUST emails. However, near the end of the project, the team worked with the TLU to send out an email advertisement to all NUST students. The email resulted in 121 registration page visits, the highest of all promotional methods in the Consideration phase, which greatly exceeded expectations. The email was also the quickest promotional method to implement, making it by far the most efficient method for the Consideration phase.

The promotional videos released on Facebook also performed extremely well in the Awareness and Consideration phases. The two videos amassed 6,968 total impressions and accounted for 29.8% of the total registration page visits. The team expected the videos to perform well based on the positive feedback received from the pilot group and the videos met this expectation.

Based on background research, the team expected that face-to-face promotion would be one of the most effective tools in the promotional strategy. Although the activation and lecture pitches did prove to be somewhat effective, these methods required significant effort and time to implement, especially when compared with electronic methods. The Introduction to MOOCs

video required approximately the same amount of time and effort to produce as the activation did to coordinate. Yet the video achieved 38 times the number of impressions and 2.8 times the number of registration page visits. Thus, the study suggests that although face-to-face promotional methods allowed the team to interact directly with students in a more personal manner, they were relatively inefficient for raising awareness, especially when compared with videos.

The expectation was that the online radio advertisements would be an effective technique for engaging with the large audience of NUST FM. However, the NUST FM radio advertisements were the lowest performing promotional method in the Consideration phase, accounting for zero registration page visits. The difficulty of hearing a signup link from a radio advertisement and then having to type it into a browser to reach the registration page, may have contributed to the ineffectiveness of the radio advertisements in the Consideration phase. This process required multiple steps, whereas a Facebook user for example, could simply click the signup link provided in a video caption, and instantly reach the registration page. However, because the radio advertisements reached an estimated audience of 2,000 listeners, it is possible that they increased students' awareness of MOOCs, potentially making them more likely to later register through a different promotional method. For example, a student could have heard a radio advertisement and then later clicked on the signup link from a digital poster on Facebook.

As a result of the team's promotional strategy, and in conjunction with the earlier advertising effort by the TLU, the MOOC platform gained 348 registered users by the conclusion of the project. This represents a 160% increase from the start of the team's promotion. As explained in Section 4.5.3, the team concluded with relative certainty that the promotional strategy facilitated the growth in registrations on the platform.

5.1.1 Refined Promotional Strategy

Considering the findings from the project's assessment of promotional performance, the team recommends making use of a refined promotional strategy for all future MOOCs. As shown in Figure 4-21, this would consist of just three primary promotional methods, video and digital posters distributed through NUST Facebook pages, as well as emails.

Figure 4-21: Refined Promotional Strategy

The future promotion team should develop these three materials early, before the release of the MOOC, and send the video and poster to the Brand Ambassador for approval at the same time in order to maximize efficiency. In addition, the future promotion team should work closely with the marketing department in order to post materials in a timely manner.

If the future promotion team has sufficient time, the secondary methods, lecture pitches and activation, could be effective methods for supplementing the three primary digital methods with face-to-face promotion. These methods were efficient at directly converting users, but required significant time to implement, and resulted in a low number of impressions. As a result, promotional videos, digital posters and email should be the primary focus of future promotional efforts, since they can reach a much larger audience and produce more registration page visits, given the amount of time invested.

Based on the data gathered for each promotional method, the team does not currently recommend the use of online radio broadcasts, or printed posters to promote MOOCs. The investigation definitively showed that these two promotional methods were ineffective at directly achieving registration page visits and conversions. In addition, printed posters consumed paper resources, which did not align with NUST sustainability initiative. However, this study did not reveal all the potential effects that these promotional methods had on the rest of the funnel. Increased awareness from printed posters and radio advertisements could have made students more likely to convert through another promotional material. Further research could investigate techniques for increasing the effectiveness of these methods in the Consideration phase.

5.2 Methods Review

During project, the team identified several areas of improvement in the methodology. The pilot group feedback process faced difficulties coordinating volunteers and obtaining feedback remotely, and could benefit from smaller, in-person meetings. Additionally, incorporating Agile principles into the project proved a challenge due to reliance on third parties, but streamlining the feedback and release mechanisms could greatly improve this process. Lastly, better marketing tools could greatly simplify the process of releasing promotional materials and collecting data.

5.2.1 Pilot Group Study

Overall, the team felt that the pilot group was a valuable part of the project, but learned several important lessons. The results from the in-person meeting were much more useful than the results from the online form used in the second round of pilot group evaluation. Although it took time to coordinate the students' schedules and find a meeting time, reminding the pilot group volunteers to fill out the online evaluation form took much longer and the team received more responses in-person than online.

Meeting with pilot group volunteers in smaller groups during the casual introductory meetings resulted in them being more engaged and talkative than they were in the meeting with the entire group. Conversely, some volunteers were less comfortable expressing their opinions in front of the larger group of their peers. Future project teams could consider meeting with student volunteers in smaller groups in order to mitigate this effect.

5.2.2 Agile Methodology

The project attempted to use Agile principles to structure the project and to iteratively develop and test promotional materials. One of the main difficulties with this approach was fitting the feedback and release mechanisms into the timeline of the iterations, because these processes were often out of the team's control. The feedback mechanism, the pilot study, relied on the cooperation and mutual availability of twelve individuals, and therefore required significant time. The process of obtaining promotional material approval by the Brand Champion and then posted by the NUST marketing department, NUST FM or the SRC also took longer than the team anticipated. As a result, the team often faced the decision to either wait for pilot

group feedback on promotional materials or send them to the various organizations early, in order to begin the process of release. Waiting for feedback made it difficult to adhere to the planned iteration timelines.

Despite these challenges, the iterative approach adopted from Agile lent a defined structure and pretesting mechanism to the project. The team believes the Agile methodology may be inherently better adapted to projects with less reliance on approval from external individuals. If future teams could design alternative methods for obtaining feedback and releasing materials, the Agile approach could perform significantly better.

5.2.3 Enhanced Marketing Tools

During the project, posting videos to the official NUST Facebook page took significantly more time than anticipated. As a result, the team resorted to using the TLU Facebook page to upload videos to Facebook while waiting for the official posts. This allowed the team to post materials immediately. However, in the team's experience, the TLU does not have significant name recognition or a following by the student body, which was a major drawback to posting from the TLU Facebook page. Future MOOC promotion efforts could benefit from creating a dedicated MOOC Facebook page. This would allow the team to post material instantly, gain easier access to analytics, and build up a dedicated social media presence for the MOOC platform. Students that "like" the page would be subscribed to all future posts by the page, making it easier to create repeated interactions with the community of MOOC users at NUST.

Additionally, while *Bitly* provided useful data for the Consideration phase of the funnel, it provided no method to determine which promotional materials led to conversions. This project also faced difficulties communicating the vast amount of unique *Bitly* links to the other NUST departments. As a result, posted materials sometimes contained misspelled or incorrect *Bitly* links. Using a survey platform that can process Urchin Tracking Module (UTM) links could solve this problem. UTM links contain information about how visitors reached the website. The survey platform could process this information to determine which promotional materials led to the most successful registrations, providing a more comprehensive analysis of the Conversion phase.

Using this process, future MOOC promotion teams could create just three UTM links, one for each method in the simplified promotional strategy, and then control the release of the promotional materials themselves using email and the new MOOC Facebook page. This would eliminate reliance on third parties, and reduce the possibility of misused links, while offering critical data on marketing funnel performance.

5.3 Suggestions for Future MOOC Platform Work

This project was able to accomplish a large portion of its goals. However, since the team focused on promotion, certain aspects of the MOOC initiative did not fit into the scope of the project. In particular, the team identified several possible areas of improvement for the MOOC platform itself, including streamlining the MOOC registration process, offering incentives to students, and crowdsourcing future MOOC creation.

5.3.1 Streamline Registration Process and User Experience

Throughout the course of the project, the team noticed that the MOOC platform could benefit from a redesign of its registration and account systems. The current process of registering for the MOOC platform is as follows:

1. Hear about MOOCs
2. Visit registration page
3. Submit registration form
4. Receive email with account details (1-3 days later)
5. Follow instructions to log on and change password
6. Access course content.

Based on personal experience and conversation with students, the team determined that the registration process for the platform contains too many complex steps. This affects the user experience significantly. The current account system offers the benefit of providing an increased level of analytics about users' backgrounds and usage habits. However, it requires an upfront registration process. The main goal of the *Technology to Foster Effective Learning* MOOC is to support students who are struggling with another online learning platform. Therefore, it is critical

that the MOOC platform be as simple to use as possible, to reduce barriers between students and the course content. This may require sacrificing some level of user tracking.

The TLU could streamline the registration process by eliminating accounts all together, although this would pose a technical challenge with respect to saving students' progress in courses, especially across different devices. As a compromise, the TLU could draw inspiration from other online learning websites, such as Khan Academy, which utilizes an "account optional" model (Khan Academy, n.d.). On Khan Academy, students who are struggling with various academic subjects can visit the website and instantly access course content, without making an account. The site later reminds students that they can create a free account in order to save their progress in courses. The team believes that this model could be a good fit for the NUST MOOC platform. This simplified access model would consist of just three steps:

1. Hear about MOOC platform
2. Visit MOOC platform
3. Access course content.

This would reduce the number of barriers between the Awareness and Conversion phases of the marketing funnel, while also drastically improving the user experience, which could potentially support the Loyalty and Advocacy phases of the marketing funnel as well.

5.3.2 User Incentives on MOOC Platform

To improve MOOC completion rates at NUST, the team recommends the addition of an incentive or recognition program. Throughout the project, students regularly asked if it was possible to obtain any sort of certification for completing the MOOCs. Currently, students do not receive any form of institutional credit or certification for completing a MOOC. Upon inspection, the project team discovered the MOOC platform is capable of generating downloadable certificates of completion for students. The TLU could potentially email certificates to students that complete courses. This basic form of recognition would be a simple technique for incentivizing the MOOC platform and could potentially motivate more students to enroll and complete courses.

5.3.3 Crowdsource Future MOOC Creation

In order for the MOOC platform to grow at the university, the team believes it is essential to incorporate courses on topics that interest students. Many of the students that spoke with the team enthusiastically shared suggestions for future courses (Appendix C.4) which interested them, including ethical hacking, E-Commerce, and App Development. The team also met several NUST faculty members who were interested in creating their own MOOCs.

One potential method of accelerating the creation of future MOOCs would be to create a MOOC called "How to Make a MOOC," which could provide interested NUST community members with the tools to create their own MOOCs in topics within their area of expertise. The TLU could still review and approve course content before publication, ensuring the content remains high-quality. This would, in-effect, crowd-source the creation of future MOOCs. This strategy could potentially have two main benefits: First, the limited TLU staff would not carry the entire burden of MOOC creation, allowing them to focus their time elsewhere. Second, this would ensure that the MOOC platform contains course content on topics relevant to the NUST community. The net result would hopefully be a greatly expanded MOOC catalog, containing content from a wide variety of passionate individuals.

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APPENDIX A: PRELIMINARY PILOT GROUP QUESTIONS AND FORMS

A.1 Preliminary Pilot Group Background Questionnaire

Preliminary Pilot Group Background Questionnaire

On the multiple choice questions please put a check on your response.

1. What is your name? _____
2. What year are you at NUST? [1] [2] [3] [4]
3. What is your course of study at NUST? _____
4. Do you own a laptop? [Y] [N]
5. Do you own a cell phone with Internet access? [Y] [N]
6. Which social media platforms, if any do you use?
   - ❑ Facebook
   - ❑ Twitter
   - ❑ Instagram
   - ❑ Snapchat
   - ❑ WhatsApp
   - ❑ Other (please specify)_____

A.2 MOOC Discussion Questions

MOOC (select one)

- ❑ Technology to Foster Effective Learning
- ❑ Time Management

Basic discussion questions:

1. Do you think you would benefit from taking this course?
2. Which part of the MOOC do you think would be most valuable to you?
3. Would you recommend this course to your friends? If so, how?
4. Do you have any ideas for promoting this course on the NUST campus?

A.3 Promotional Material Scorecard

Promotional material: ____(Filled out by MOOC team)_____

Material Description: _____(Filled out by MOOC team)_____

MOOC (Filled out by MOOC team):

- ❏ Technology to Foster Effective Learning
- ❏ Time Management

(Filled out by individual pilot students)

	Strongly disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]
This promotional material provides useful information about the MOOC.					
This promotional material is entertaining.					
This promotional material is irritating.					
This promotional material clearly portrays the benefits of the MOOC.					
This promotional material is credible.					

Additional Comments (Optional):

_____

_____

A.4 Promotional Material Readiness and Indicator Calculation Example

Member 1:

	Strongly disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]
This promotional material provides useful information about the MOOC.			X		
This promotional material is entertaining.				X	
This promotional material is irritating.		X			
This promotional material clearly portrays the benefits of the MOOC.			X		
This promotional material is credible.			X		

Member 2:

	Strongly disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]
This promotional material provides useful information about the MOOC.				X	
This promotional material is entertaining.					X
This promotional material is irritating.	X				
This promotional material clearly portrays the benefits of the MOOC.		X			
This promotional material is credible.	X				

Member 3:

	Strongly disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]
This promotional material provides useful information about the MOOC.		X			
This promotional material is entertaining.	X				
This promotional material is irritating.				X	
This promotional material clearly portrays the benefits of the MOOC.				X	
This promotional material is credible.				X	

Member 4:

	Strongly disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]
This promotional material provides useful information about the MOOC.					X
This promotional material is entertaining.					X
This promotional material is irritating.	X				
This promotional material clearly portrays the benefits of the MOOC.					X
This promotional material is credible.					X

Member 5:

	Strongly disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]
This promotional material provides useful information about the MOOC.					X
This promotional material is entertaining.			X		
This promotional material is irritating.			X		
This promotional material clearly portrays the benefits of the MOOC.				X	
This promotional material is credible.				X	

Scorecard Summary:

Member/Scores	Question 1	Question 2	Question 3 (Inverted)	Question 4	Question 5
Member 1	3	4	4	3	3
Member 2	4	5	5	2	1
Member 3	2	1	2	4	4
Member 4	5	5	5	5	5
Member 5	5	3	3	4	4
Average	3.8	3.6	3.8	3.6	3.4

Weighted Score Sheet:

	Weight	Average Score	Weighted Score
Informativeness	0.270	3.800	1.030
Entertainment	0.171	3.600	0.513
Non-Irritation	0.122	3.800	0.464
Benefits	0.264	3.600	0.950
Credible	0.173	3.400	0.588
Total (Readiness Indicator)			3.545

A.5 Promotional Materials Qualitative Discussion Questions

Promotional material: ____(Filled out by MOOC team)_____

Material Description: _____(Filled out by MOOC team)_____

MOOC (Filled out by MOOC team):

- ❑ Time Management
- ❑ Technology to Foster Effective Learning

How would you change this material to more accurately describe the MOOC?

How would you make this material more entertaining?

How would you make this material less irritating?

How would you change this material to more accurately convey the benefits of taking this MOOC?

A.6 Agenda for the First Pilot Group Meeting

Meeting 1 Agenda

Date: March 30, 2017

Meeting Agenda/ Discussion Points

1. Ice breaker and background information collection
2. Expose pilot group to MOOCs
3. Brainstorm ideas on how to best promote the MOOCS
4. Present team's preliminary promotional materials to group and evaluate them

1. Ice breaker and background information collection

The team will conduct icebreakers to get to know the members of the pilot group and then the team will give them the Preliminary Pilot Group Background Questionnaire in Appendix 1

2. Expose pilot group to MOOCs

The team will expose the pilot group to the Time Management and Technology to Foster Effective Learning MOOCs.

3. Brainstorm ideas on how to best promote the MOOCS

After the group has seen the MOOCs, the team will ask them for ways they would promote these MOOCs.

4. Present team's preliminary promotional materials to group and evaluate them

The team will present our preliminary promotional materials to the group and get feedback based off their responses in the questionnaire in Appendix A.3 and an open discussion that the team will have with the group. The discussion will be on the quality of the MOOCs and the team will record their findings in the form found in Appendix A.5.

A.7 Online Survey for Second Pilot Group Evaluation

MOOC Promotional Material Feedback

This past week we have been working on two very short promotional videos for the MOOC platform, as well as another poster.

After viewing each material, please rate each material on the given criteria as honestly as possible. Please be critical! If you think something could be better, don't be afraid to rate it poorly.

Feel free to leave any comments and ask if you have questions. The results will be averaged and included in our paper, but as always it is completely anonymous.

Thank you in advance and we hope you are all enjoying your recess. :)

* Required

Intro to MOOCs Video

http://youtube.com/watch?v=rXuV2RlrTuM

The first video introduces the concept of MOOCs, and aims to get students interested enough to sign up.
If it doesn't load try watching on YouTube: https://www.youtube.com/watch?v=rXuV2RlrTuM

1. **This promotional material provides useful information about the MOOC.** *
   Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

2. **This promotional material is entertaining.** *
   Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

3. **This promotional material is irritating.** *
   Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

4. **This promotional material clearly portrays the benefits of the MOOC.** *
Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

5. **This promotional material is credible.** *
Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

6. **Additional Comments (Optional)**

Second Video Feedback

We also developed a second promotional video tailored to "Technology to Foster Effective Learning" MOOC.

Technology to Foster Effective Learning Video

http://youtube.com/watch?v=6NPWiybOjZQ

The goal of the second video is to talk more specifically about the first MOOC, which teaches eLearning skills. If it doesn't load try watching on YouTube: https://www.youtube.com/watch?v=6NPWiybOjZQ

7. **This promotional material provides useful information about the MOOC.** *
Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

8. **This promotional material is entertaining.** *
Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

9. **This promotional material is irritating.** *
Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

10. **This promotional material clearly portrays the benefits of the MOOC.** *
Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

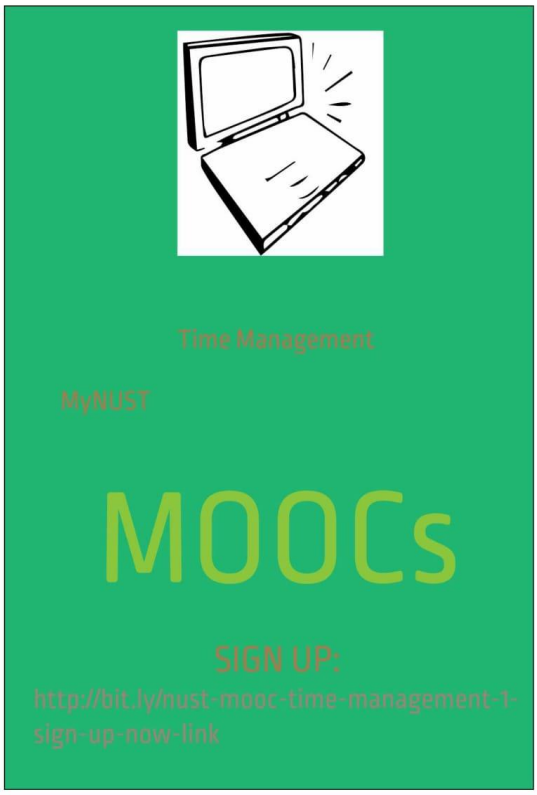
11. **This promotional material is credible.** *
Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

12. **Additional Comments (Optional)**

MOOC Poster Feedback

MOOC General Poster



13. **This promotional material provides useful information about the MOOC.** *
Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

14. **This promotional material is entertaining.** *
Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

15. **This promotional material is irritating.** *
Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

16. **This promotional material clearly portrays the benefits of the MOOC.** *
Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

17. **This promotional material is credible.** *
Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

18. **Additional Comments (Optional)**

Powered by Google Forms

APPENDIX B: NUST PROMOTION ATMOSPHERE

B.1 Sustainability Pledge Certificate

B.2 Meeting Minutes

B.2.1 Interview with SRC representative

Date: Tuesday, March 14, 2017

Location: TLU

Time: 15:00

Interviewee: Mr. Unoovene

Discussion:

- Self-introductions
- Team discussed promotion methods at NUST

Meeting with Mr. Unoovene

The team met with Mr. Unoovene, who deals with external affairs for the NUST Student Representative Council (SRC), to initiate contact with the SRC and gain perspectives on how students receive information on campus.

Where do most students get their information at NUST?

Mr. Unoovene said he believes that most students get information through the NUST Facebook page. He said that posting videos and posters here could be very effective.

Is SMS and email used for announcements on campus?

Mr. Unoovene was not aware of any major email announcements in use but he said that the SMS announcement service was used regularly to communicate with students. He suggested the team to get in contact with the administrators who run it.

We've heard about the possibility of using the radio station to promote the MOOCs, do a lot of students listen to this?

Mr. Unoovene believes that the majority of students do not listen to the radio station, but some do. He estimated two out of seven students listen regularly.

Do you think students would attend informational seminars about the MOOCs?

Mr. Unoovene said that if we promote the seminars well students would attend.

Additional Comments:

Unoovene suggested distributing pamphlets during lunch time. He believes that advertising during this time is one of the most effective times because students are changing classes.

B.2.2 Interview with NUST FM Representatives

Date: Wednesday, March 22, 2017

Location: TLU

Time: 14:30

Interviewees: Vivette Ritmann & Wilhelmina Abraham

How can we best use the radio to promote the MOOC project?

Ritmann suggested that combination of live interviews and advertisements would be the best. She mentioned that here is also an announcement every three hours that departments can submit to NUST FM. Besides radio, there is a program called the Student Brand Ambassadors (SBA). They are in charge of "lecture bombs", a form of face-to-face promotion where the members of SBA go to lectures and have short pitches about the events they are promoting.

Who can we ask for more information about "lecture bombs"?

Ritmann suggested contacting Mr. Panduleni in the NUST marketing department.

Is there a chance for us to use the NUST FM's social media presence?

Ritmann confirmed that this is possible. and mentioned that NUST FM has several social media platforms including Instagram, Snapchat, Twitter and Facebook.

Is there a cost related to the use of NUST FM?

Ritmann said that there is no cost for internal (NUST related) radio promotion.

How many advertisements can we run on NUST FM?

Ritmann said that the team could run multiple advertisements as there is no limit.

Ms. Abraham asked about which accents the team would like to have for reading the ads.

The team members expressed that they don't have a preference. Ritmann suggested to have two of the team members read the scripts because foreign accents can attract attention.

How can we get in contact about posting on official NUST Facebook page?

Ritmann recommended contacting the NUST marketing department.

How do we get in contact with NUST marketing to get our promotional materials approved?

Ritmann said to contact Ms. Cherley Du Plessis, the Brand Champion.

B.2.3 Interview with Brand Champion, Cherley Du Plessis

Date: Wednesday, March 28, 2017

Location: Elizabeth House, Brand Champion Office

Time: 08:00

Interviewee: Cherley Du Plessis

Ms. Du Plessis explained the significance of the NUST brand.

Ms. Du Plessis said the NUST brand is only one year old and needs to differentiate itself from UNAM as the colors are very similar. NUST also has 180 international partnerships

The team asked about possibilities for using posters and brochures.

Du Plessis mentioned the NUST sustainability pledge. To stay sustainable, Du Plessis suggested not using printed promotional materials such as brochures. She also suggested posting posters on Facebook and tracking how many people have viewed. She suggested the use of QR code on posters.

The team asked about possibilities for using promotional videos.

Du Plessis recommended using short videos, around 30-60 seconds long. She mentioned that creating three different videos could be effective.

Du Plessis suggested the team include self-introduction in promotion.

Du Plessis suggested the team make a newsletter-style poster explaining the mutual partnership between WPI and NUST in order to let others know where the team is coming from and share the culture. She recommended including the WPI logo and information about the upcoming activation. She reminded the team that printed posters need an approval stamp from SRC.

Du Plessis explained NUST branding guidelines including the font, colors, and the meaning behind each symbol.

Du Plessis said that he red band represents the people and lifeblood of the university and is mandatory for all official posters.

Du Plessis contributed ideas for promotional videos.

Du Plessis suggested using a "video-wall" of students talking about their troubles with MyNUST eLearning platform in the *Technology to Foster Effective Learning* video. She suggested also having a few students stating list of benefits for taking the MOOC

APPENDIX C: PROMOTIONAL MATERIAL DEVELOPMENT

C.1 Video Consent Form

WORCESTER POLYTECHNIC INSTITUTE

Photographic / Media Consent Form

We are a team of Worcester Polytechnic Institute (WPI) students working with the Teaching and Learning Unit (TLU) at Namibia University of Science and Technology (NUST). Our team will focus on the promotion of Massive Open Online Courses (MOOCs) at NUST. We would like to take a photograph and/or video depicting yourself and others interacting with the MOOCs and speaking on camera about the MOOCs. Your identity will remain completely anonymous if you choose, and your images will function only as a promotional resource. Our team may scale, crop, or enhance your image, but will not alter the image in any other ways. Your participation is completely voluntary and you may ask any member of the team to withdraw your images at any time. If you are under the age of 18, you must obtain the consent of an adult guardian before participating. Thank you for your time.

I hereby consent to the collection and use of my personal images via photography or video recording.
I acknowledge these may appear on the NUST social media pages, websites, publications as well as WPI publications.
I understand that no personal information, such as names, will appear in any publications unless I give express written consent.
I acknowledge that the members of the NUST MOOC Promotion team may scale, crop, or enhance images or recordings of myself and others, but they will not alter the images or recordings in any other way.
I also understand that I may withdraw this consent anytime, upon written notice to the members of the MOOCs Team.

CONSENT FORM

I .....
(Name of person giving consent & parent/guardian if under 18 years of age)
Voluntarily consent to the use of photographs or video footage for use on the final report and records of the TLU (Tel. +264 61 207 2559), as well as the NUST MOOC Promotion team (Email: nam17-nust@wpi.edu). You may also contact the chair of the WPI Institutional Review Board (Prof. Kent Rissmiller, Tel. +1 508-831-5019, Email: kjr@wpi.edu) or WPI's University Compliance Officer (Jon Bartelson, Tel. +1 508-831-5725, Email: jonb@wpi.edu).
I further understand that I may withdraw this consent anytime, upon written notice.

....
Signature of person giving consent Signature of parent/guardian (if under 18)

Date .....

APPROVED
WPI IRB 1
4/7/17 to 3/18/18

100 INSTITUTE ROAD, WORCESTER MA 01609 USA

C.2 Video Scripts

C.2.1 Introduction to MOOC Video

[NUST / TLU Logos]

[Text: MOOCs?]
"Let's talk about something exciting. Their called MOOCs."

[Text: What is a MOOC?]
"So, what is a MOOC?"

[Text: Massive Open Online Course]
"MOOC stands for Massive Open Online Course. It's a new type of online course that can be accessed by an unlimited number of students, from all around the world."

[Video: MOOC platform on a laptop]
"And here at NUST, there's a brand new MOOC platform, which allows students to learn skills that help them succeed at the university and beyond."

[Text: 2 Initial Courses]
The NUST Teaching and Learning Unit has developed two initial courses."

[Text: 1. Technology to Foster Effective Learning]
"The first course, titled "Technology to Foster Effective Learning," teaches students how to use the myNUST eLearning platform."

[Text: 2. Time Management]
"A second course will help students develop Time Management skills, with many more to follow."

[Video: Clock, Text: 5 hours]
"These courses are short, only about 5 hours each, and you can start and stop whenever you want."

[Video: Map of the world with animated lines extending from Namibia]
"As the first MOOC project in Namibia, this will allow NUST to share knowledge with other university students around the world."

[Sign up screen appears]
"So what are you waiting for? Sign up today!"

[NUST / TLU Logos]

C.2.2 Technology to Foster Effective Learning Video

[NUST / TLU Logos]
[Video wall featuring 9 NUST students expressing frustration with the eLearning platform.]
"This is so frustrating, how am I going to submit my assignment?"
"I have no idea how to change my password."
"How do I message my lecturer?"
"How do I update my profile?"
"How do I use a Wiki?"
"I don't even know how to check my marks online!"

[Student volunteer appears on camera and introduces the course.]
"Are you have trouble with the MyNUST eLearning platform? It's time to step up your eLearning game."

[Overlayed video of the MOOC platform and course content in use.]
"Introducing Technology to Foster Effective Learning. It's a new online course at NUST, designed to help students master the eLearning platform."

[Second student appears on camera and expands on the benefits of the course.]

"You can learn how to change your password, upload assignments, create a portfolio, and much more. This course is short, only about 5 hours. You can start and stop on your own time."

"So what are you waiting for? You can sign up today!"
[Sign up screen appears with registration link]
[NUST / TLU Logos]

C.3 NUST Branding Guidelines

C.4 Future MOOC Suggestions from Activation

Following are the ideas for future MOOC topics gathered from the activation on April 19, 2017:

- Ethical Hacking
- App Development
- E-Commerce

C.5 Email Announcement

Attention NUST Students,

There is an exciting new opportunity on campus! The Teaching and Learning Unit (TLU) has created a new platform for MOOCs, or Massive Open Online Courses. This new type of online course is designed to help students develop critical skills that help themsucceed in their academic and work lives. Check out this quick video to learn more about MOOCs at NUST: http://bit.ly/WhatIsAMOOC

These courses are short and not for credit. They only require about five hours of total course time, and can be taken in students'free time. The MOOCs are also open to students around the world.

Currently, the TLU has created two MOOCs so far:

Technology to Foster Effective Learning - Learn how to effectively use the MyNUST eLearning platform in your classes.Update your profile, change your password and email, create an ePortfolio and much more. Day 5 content provides the steps on how to take online survey on teaching and courses evaluation; this is the exercise to evaluate lecturers and courses. It is important to participate and support the University to enhance the teaching, course design and implementation. The name of the online survey is "***Evaluation of Teaching and Courses by Students - 2017 Semester 1***" and it is found in all the courses you registered for this semester. You will learn how to enroll yourself in your courses on Day 2 and the self-enrolment key is the current course code of the course you want access. If your lecturers already gave you the enrolment key, then use the one you received.

Time Management - Set yourself up for success at NUST and beyond, by learning strategies for managing your time, staying focused, and getting organized.

Remark:

If you have already an account to access the MOOC platform found at http://mooc.nust.na , then ignore this e-mail. If not, please register as explained below.

Registration is free and quick! Sign up today to access all the available courses and many more to come. Click on the link provided below to register or copy the link and paste it on your preferred browser:

http://bit.ly/nust-mooc9

Kind regards,

Maurice Nkusi
Acting Director
Teaching and Learning Unit
Namibia University of Science and Technology

APPENDIX D: MOOC REGISTRATION FORM

MOOC Registration

NAMIBIA UNIVERSITY OF SCIENCE AND TECHNOLOGY

Dear participants,

Welcome and thank you for registering for our MOOC (Massive Open Online Course) platform on mooc.nust.na.

This online form collects your basic information for account creation purposes on the Namibia University of Science and Technology (NUST) MOOC platform. This should only take about 2 minutes and you should receive an email with your account details soon.

Our first MOOC, **Technology to Foster Effective Learning**, will launch on April 3rd, 2017. The course is a five-hour course focusing on how to utilise existing technologies, such as eLearning to ensure students' academic success. This online course is open to all students at NUST or anyone with the interest to develop skills on how to utilise technology for learning. The second MOOC, Time Management will launch on April 18th, 2017. More details to follow.

Thank you,

Mr. Maurice Nkusi
Teaching and Learning Unit
Namibia University of Science and Technology

There are 10 questions in this survey

Participant Details

Select your title: *

Please choose **only one** of the following:

- ○ Mr
- ○ Ms
- ○ Mrs
- ○ Dr
- ○ Prof
- ○ Other

Sex: *

Please choose **only one** of the following:

- ○ Male
- ○ Female

Enter the name of your institution: *

Please write your answer here:

Enter your country: *

Please write your answer here:

Enter your town: *

Please write your answer here:

Enter your First Name: *

Please write your answer here:

Enter your surname: *

Please write your answer here:

Enter your e-mail: *

Please write your answer here:

Enter your field of study/Profession: *

Please write your answer here:

How did you hear about this MOOC? *

Please choose **all** that apply:

- ☐ Facebook
- ☐ SMS (Text Message) Announcement
- ☐ Twitter
- ☐ Pamphlet
- ☐ Poster
- ☐ Radio
- ☐ Lecture
- ☐ Seminar
- ☐ Friends
- ☐ Email
- ☐ Other: